

PURCHASING

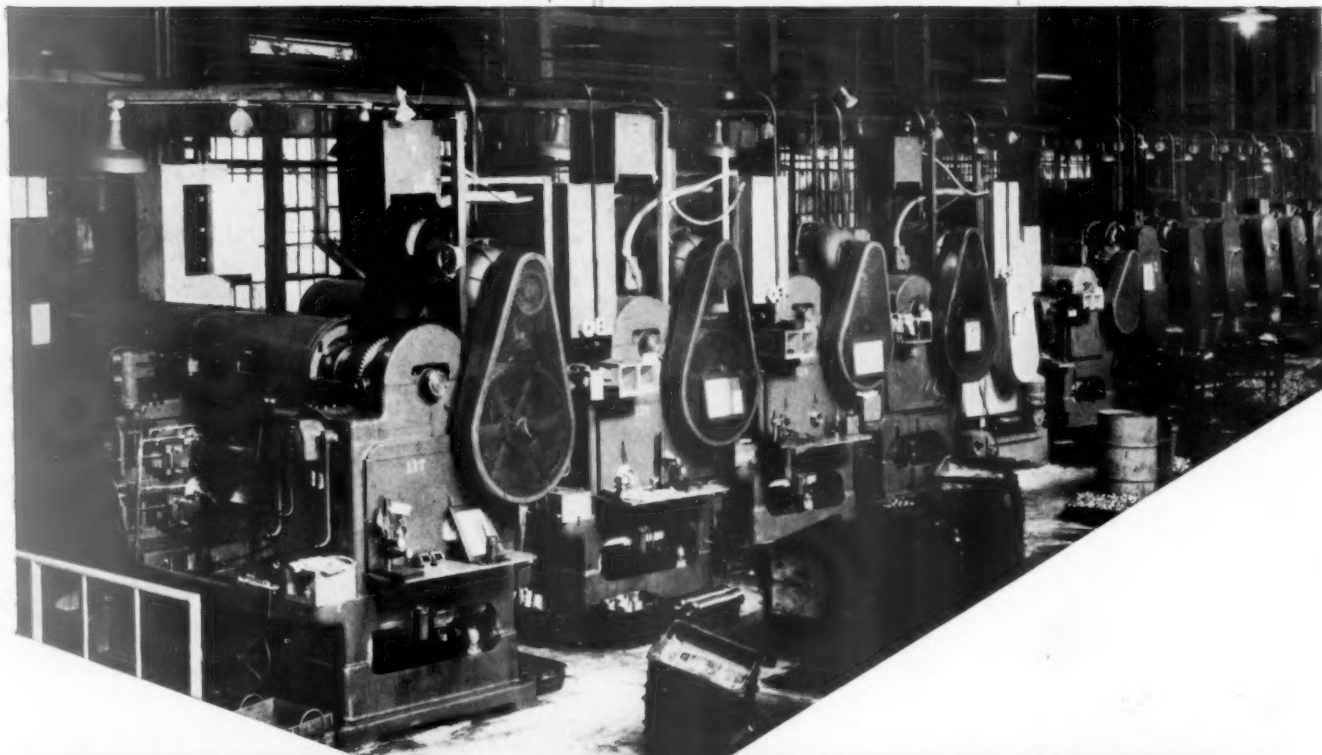
OCTOBER, 1954



Cover photo: Chain Belt's F. G. Syburg (see page 73) • Table of Contents, page 5

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"WE CAME BACK TO TEXACO FAST"

Reports Bearing Manufacturer (Name on request)

HERE'S A GOOD example of how Texaco quality and the skill of Texaco Lubrication Engineering Service help manufacturers keep their production up and unit costs down.

About three years ago, the plant shown made a direct comparison between *Texaco Cleartex Oil* and another brand of dual-purpose oil in their automatics. This other oil not only discolored and oxidized copper but quickly created a very dirty condition on the lubricating sides of the machines. So, says the report:

"We came back to Texaco—fast! Within a matter of days . . . the lube sides of the automatics were clean as a whistle again, and we have had no more trouble since that time."

A Texaco Lubrication Engineer will gladly help you prove to yourself that Texaco can help you produce a better product at a lower cost. Just call the nearest of the more than 2,000 Texaco Distributing Plants in the 48 States, or write:

The Texas Company, 135 East 42nd Street, New York 17, N. Y.



TEXACO Lubricants, Fuels and Lubrication Engineering Service

TUNE IN . . . TEXACO STAR THEATER starring JIMMY DURANTE or DONALD O'CONNOR on television . . . Saturday nights, NBC.

For More Information Circle No. 101 on Inquiry Card—Page 17

Tech

MORE POWER IN SMALLER FRAMES

**SAVE
SPACE**



**WEIGH
LESS**

NEW *Century* Form "F" Fractional H.P. Motors

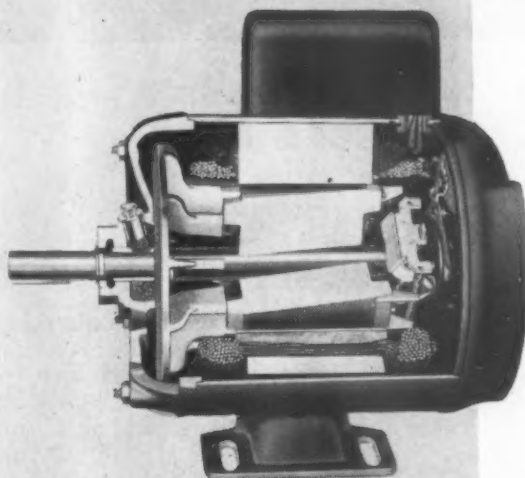
NOW AVAILABLE IN $\frac{1}{8}$ TO $\frac{3}{4}$ H.P.

Thanks to new techniques developed in the last several years, this *smaller* power package combines improved performance with even greater Century dependability.

Here's What New Techniques Deliver...

- 1 Better magnetic characteristics for the motor because of more uniform silicon laminated steel in magnetic cores.
- 2 A high dielectric and increased abrasive resistance qualities result from improved plastic insulated wire in the coils.
- 3 Important slot space is saved by improved plastic slot insulation. Extremely tough with higher dielectric resistance.
- 4 Unusual resistance to abrasion, moisture and heat is provided by improved thermal setting plastic varnish insulation on windings.
- 5 Squirrel cage rotors are more uniform because of improved high-pressure die-cast aluminum rotors. Individually, dynamically balanced.
- 6 Increased cooling ability is provided by improved ventilation.
- 7 These new Century Motors incorporate all mechanical features proved effective in thousands of varying applications.

For full details on Century Fractional H. P. Motors—write for bulletin 1-S Page 1. Century also offers a wide range of types and sizes in AC and DC . . . $\frac{1}{8}$ to 400 H. P.



CENTURY ELECTRIC COMPANY, 1806 Pine Street, St. Louis 3, Missouri
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PURCHASING published monthly, by PEEAYE, INC., subsidiary CONOVER-MAST PUBLICATIONS, INC., Publication Office, Orange, Conn. Editorial and Executive Offices, 205 E. 42nd St., New York 17, N. Y. Entered as second class matter August 9, 1942, at the Post Office in Orange, Conn., under the act of March 3, 1879. Subscription rates: United States, U. S. Possessions and Canada, \$4 per year; elsewhere \$10 per year. Single copies 50c. October, 1954. Volume XXXVII, No. 4.

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RESEARCH KEEPS

B.F. Goodrich

FIRST IN RUBBER



A rubber mule that's too stubborn to wear out

A typical example of B. F. Goodrich improvement in rubber

THEY call it a "mule drive" when a belt has to be twisted to turn sharp corners from one wheel to another. Probably because it's the toughest service a belt has to stand, and "mule" means hard-boiled toughness.

On the job in the picture (a lumber mill) they used to use hardened steel gears, but they wore out too soon, took high overtime to repair and replace.

Someone suggested rubber! Rubber last longer than steel? Plant engineers used B. F. Goodrich Highflex belting—an improved design that has better

resistance to strain, is tempered with chemicals which keep it "live" longer, and has many important advantages your distributor will be glad to demonstrate.

This improved B. F. Goodrich belting is what you see in the picture. It has already saved the user \$1500, and is good for still longer life and continued savings.

A spectacular cost saving, it's true. Yet B. F. Goodrich products nearly always reduce costs. Every product B. F. Goodrich makes—V belts, con-

veyor belts, hose and many other things—is constantly being studied by practical engineers to see how it can be improved from the user's standpoint, how it can be made to last longer and do a better job. That's why it pays to see your B. F. Goodrich distributor before you decide on any product made of rubber. *The B. F. Goodrich Company, Dept. M-315, Akron 18, Ohio.*

B.F. Goodrich
INDUSTRIAL PRODUCTS
DIVISION

For More Information Circle No. 105 on Inquiry Card—Page 17

For More Information Circle No. 106 on Inquiry Card—Page 17→
PURCHASING

Put versatile **INLAND**

4-WAY

SAFETY PLATE

work in your plant and on your products

Now the lead of progressive companies all over the country who are finding more and more ways in which they can use Inland 4-WAY Safety Plate to do the job better!

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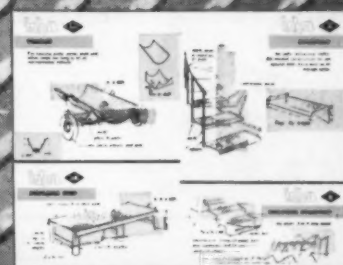
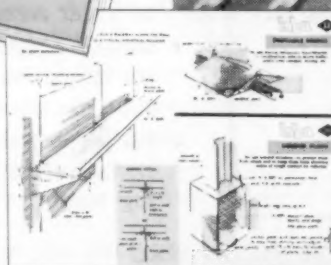
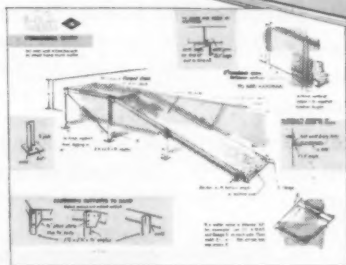
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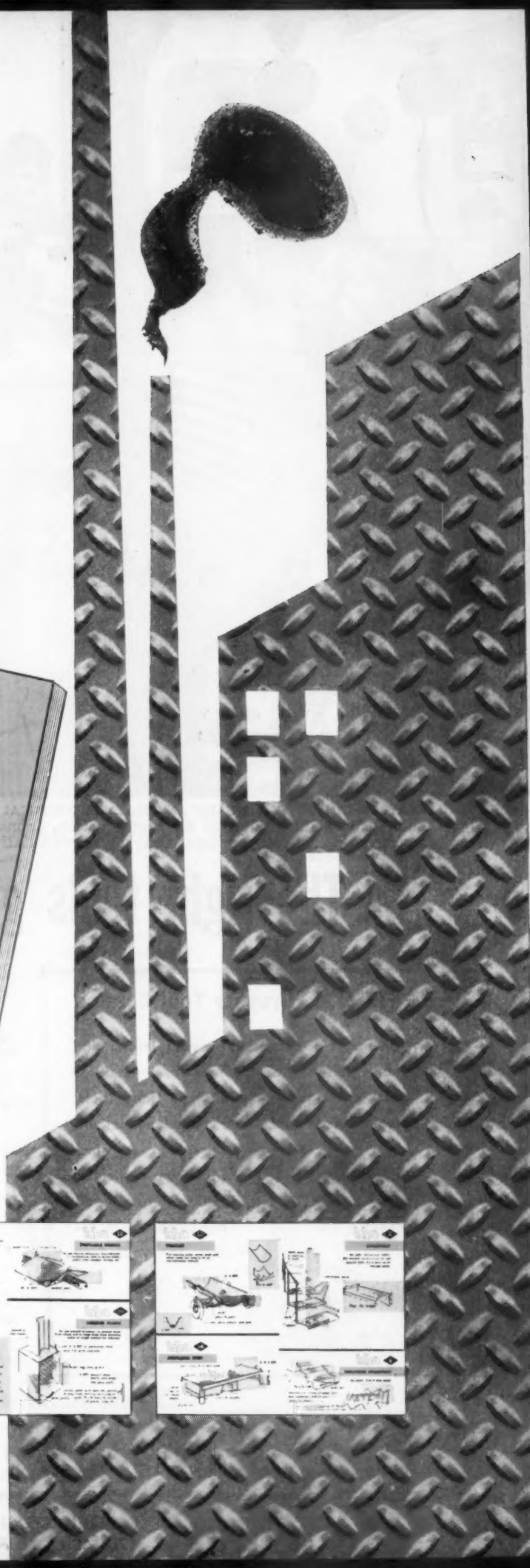


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The National Magazine of Industrial Purchasing

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FREE INFORMATION SERVICE

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PIPE HANGERS
and SUPPORTS



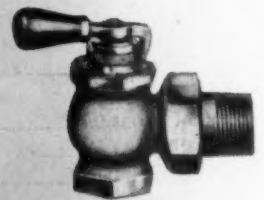
WELDING FITTINGS
and FLANGES



VALVES



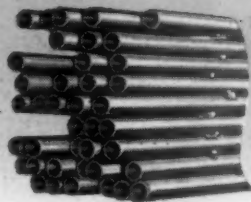
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SPECIALTIES



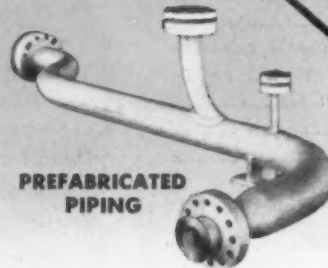
WATER WORKS
SPECIALTIES

This, TOO, is
GRINNELL!

PIPE



PREFABRICATED
PIPING



To many people, Grinnell is known best as a producer of high quality malleable and cast iron pipe fittings or perhaps as



the manufacturer of Grinnell Automatic Sprinkler Systems. But there are other reasons behind Grinnell's leadership in the piping field. For example . . .



Grinnell makes **PIPE HANGERS** and **SUPPORTS** of all types . . . from the simplest hanger for domestic service to engineered hangers which provide flexible but constant support for piping at such temperatures as 1000°F.

Grinnell manufactures special **VALVES**, including **DIAPHRAGM VALVES** . . . designed to handle corrosive fluids, gases, beverages, foods, compressed

air, suspended solids . . . in lines where corrosion, abrasion, contamination, clogging, leakage and maintenance are costly factors.

Grinnell **WELDING FITTINGS** and **FLANGES** are available in many different metals.

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GRINNELL
WHENEVER PIPING IS INVOLVED

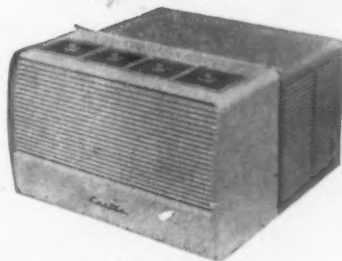


Grinnell Company, Inc., Providence, Rhode Island

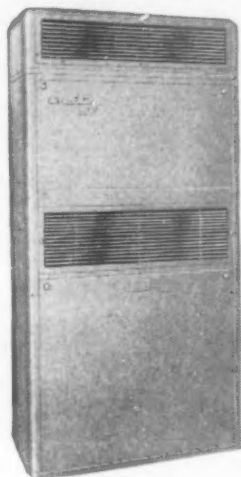
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Grinnell-Saunders diaphragm valves • pipe • prefabricated piping • plumbing and heating specialties • water works supplies
industrial supplies • Grinnell automatic sprinkler fire protection systems • Amco air conditioning systems

For More Information Circle No. 108 on Inquiry Card—Page 17



NEW Attractive Window Units in 3 models,
for commercial and residential use



Package Units—2, 3, 5, 7½ and 10 tons.
Choice of Open or Semi-hermetic
Compressors... and 15 ton packaged
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Curtis

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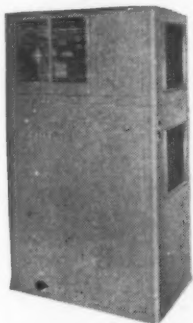
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The Curtis line is precision-built to assure a long life of trouble-free service. You can specify Curtis air conditioning equipment with the assurance that it will never let you down.

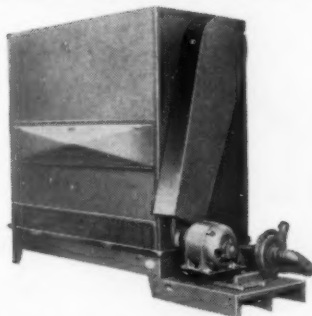
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- ✓ Priced to meet competition.
- ✓ Smooth, quiet operation.
- ✓ A Curtis Unit for every job—
a complete range of sizes and types.

See Curtis data in Sweets Catalog File, and write for your free copy of NEW Curtis Air Conditioning Manual.

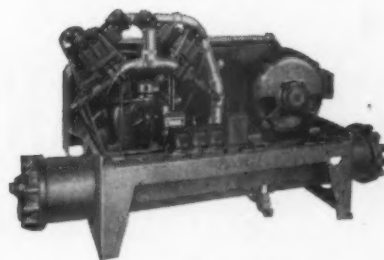
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For More Information Circle No. 109 on Inquiry Card—Page 17



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you make by
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or money*

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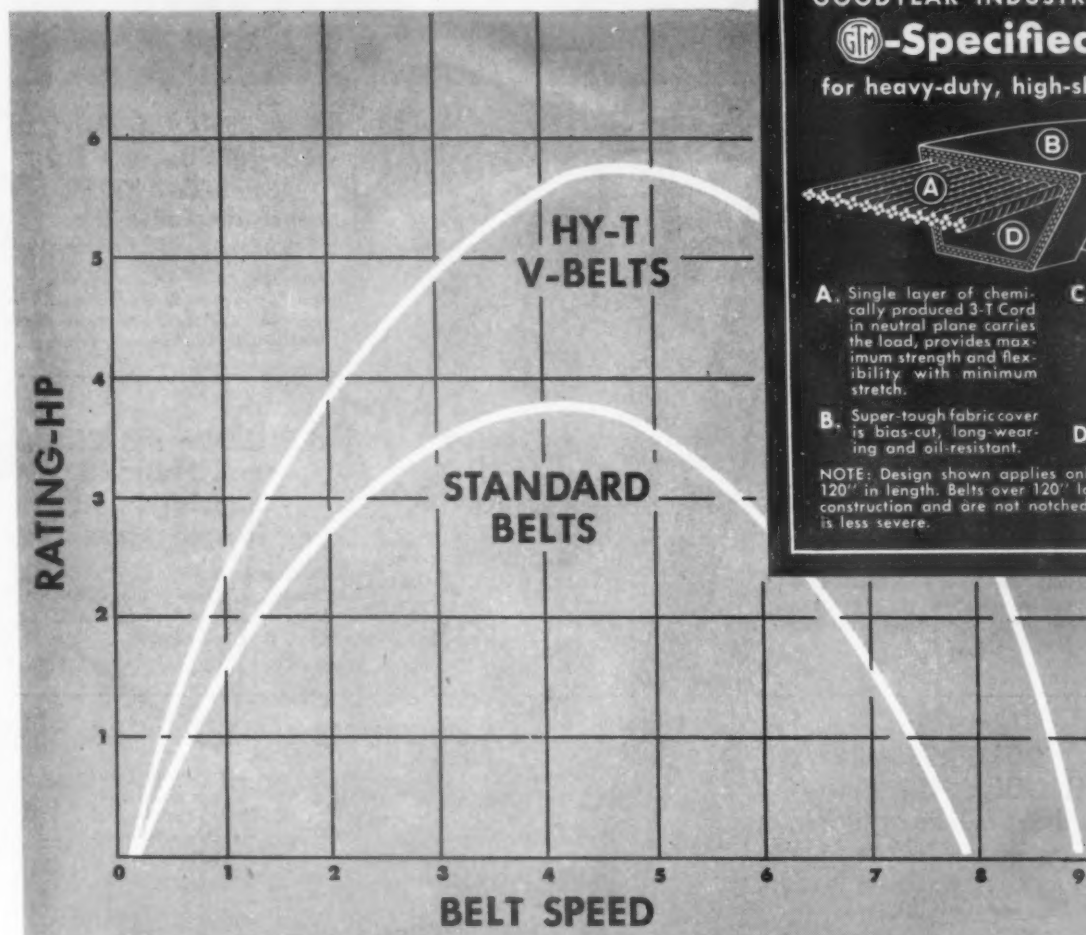
We have some specific suggestions for the profitable use of Long Distance in Sales, Purchasing, Administration, Traffic, Production, Engineering and Accounting. A call to your Bell Telephone Business Office will bring a representative to discuss them with you.

BELL TELEPHONE SYSTEM



TRIPLE-TEMPERED (3-T) CORD

makes new, super-V-belt possible



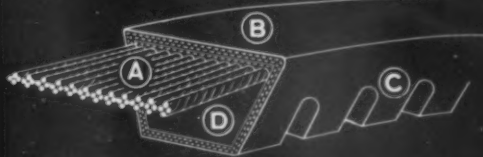
HY-T—T. M. The Goodyear Tire & Rubber Company, Akron, Ohio

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-Specified HY-T V-Belts

for heavy-duty, high-shock-load drives



A. Single layer of chemically produced 3-T Cord in neutral plane carries the load, provides maximum strength and flexibility with minimum stretch.

C. Notches close when rounding pulley to provide positive grip on sheave, open between pulleys to ventilate belt.

B. Super-tough fabric cover is bias-cut, long-wearing and oil-resistant.

D. Cushion section of durable rubber.

NOTE: Design shown applies only to HY-T V-Belts under 120" in length. Belts over 120" long are of a multiple-ply construction and are not notched, since the flex problem is less severe.

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proved to give longer life than standard fabric belts with appreciable savings in drive and maintenance costs. For details on the super-rated HY-T V-Belt see the G.T.M. or your Goodyear Distributor. Or write Goodyear, Industrial Products Division, Akron 16, Ohio.

YOUR GOODYEAR DISTRIBUTOR can quickly supply you with *Hose, Flat Belts, V-Belts, Packing or Rolls*. Look for him in the yellow pages of your Telephone Directory under "Rubber Products" or "Rubber Goods."

GOOD YEAR

THE GREATEST NAME IN RUBBER

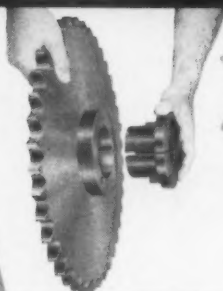
For More Information Circle No. 111 on Inquiry Card—Page 17

Here's your guide to **NEW SAVINGS** with NEW Standardized **BOSTON** *gear* Products — from STOCK



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UP TO 2 1/4"



ADDED TO FORMER
1/2" TO 1 1/4" RANGE



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NEW PRODUCTS Catalog NP-55

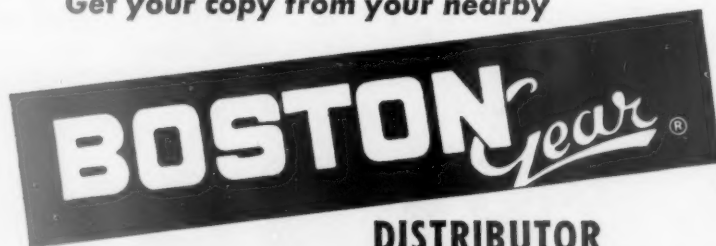
lists full specifications of these new Boston Gear products and many others in 196 pages. Get your copy . . . use it with your BOSTON Gear General Catalog No. 55 . . . for up-to-the-minute information on the products that make BOSTON Gear first choice of cost-wise buyers.



3-PIECE **JAW COUPLING** with **BOST-BRONZ** insert

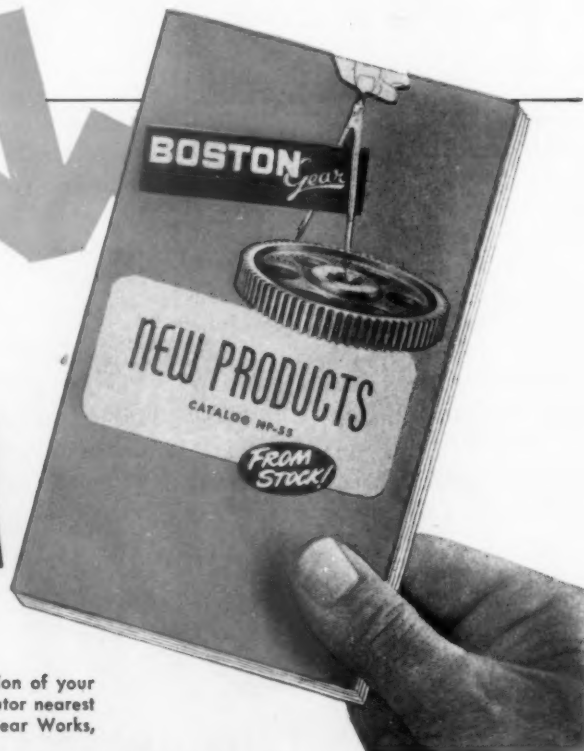
BOST-BRONZ oil-impregnated Bearing cushions torsional load, resists wear from any rubbing friction . . . 17 stock sizes, with hole diameters from 3/8" to 1 1/2".

Get your copy from your nearby



DISTRIBUTOR

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For More Information Circle No. 112 on Inquiry Card—Page 17



SWEDISH STEELMAKER STILL GOING STRONG

two basic resources: high-grade Swedish ore, over 200 years' experience

Uddeholm is one of Sweden's leading producers of fine steels. Although an iron works was set up at Uddeholm as early as 1668, the company got its real start in the 1700s. The growth that began then still continues. Today, Uddeholm owns mines, ferro alloy works, and modern mills, as well as power stations to run them and railroads to connect them.

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For More Information Circle No. 113 on Inquiry Card—Page 17

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MACHINE SCREWS TAPPING SCREWS



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- available also in the superior Clutch Head® type screw.
- let us be of service to you.

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CLUTCH HEAD SCREWS
STAMPINGS**

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United Screw and Bolt Corporation
Chicago 8 Cleveland 2 New York 7



WASHINGTON REPORT

for purchasing agents

October 1, 1954

GOVERNMENT PROPS UNDER THE ECONOMY

Administration has thrown everything that it can into the economic pot to keep it at a high boil.

First, money has been made available by expanding the lending power of banks—also consumer buying power has been held high. Disposable personal income has been maintained at a stable rate of about \$252 billion—which is ahead of 1953.

Then there has been launched a program of road building and public works that will further accelerate the already record pace in the construction industry.

The combination of a ready supply of money and the direct infusion of Government spending is considered a sufficient spur to keep the economy at a high level.

* * *

SOLUTIONS NOT ALWAYS AVAILABLE

Where business falters, the Government will treat the problem with some special nostrum—such as in the case of the domestic zinc and lead producers whose failing markets picked up when their output was purchased for the nation's strategic stockpile.

There are, however, a number of unanswered questions—such as what will be done, if anything, to bring the rate of steel production closer to the capacity to which the nation's mills have been expanded.

So far there seems little prospect that even in the Fall industrial pickup, steel production will increase much beyond the 70% of capacity level.

A problem of similar stripe is the decline in the backlog of orders.

Here, the Government can take no hand. Much of the melting away of order backlogs is due to a drop in the defense program. In many instances, it was the piling of military orders on top of expanded civilian business that built up the backlogs.

* * *

SHARPER COMPETITION AHEAD

Operation of industry at varying levels under 100% capacity sets the stage for competitive selling and selective buying.

From the purchasing agents' viewpoint, a highly competitive market has broad implications.

First, the sources of supply tend to multiply, and second, the purchasing function becomes increasingly important as the savings made at the point of purchase enable the sale of the final product or service at a competitive figure.

As virtually every segment of the nation's industrial capacity has been greatly enlarged, the era of competition will hit every raw material, all processing, transportation and marketing.



X-thousand chances to be wrong...or right !

It's here when piping is in the blueprint stage that both original costs and operating costs are determined.

Make the wrong choice—an inferior valve—for just one location and it may mean only a *little extra* maintenance later on. But if "wrong" valves are specified at a dozen, a score—or more—locations, the *added* cost for excessive maintenance can become hard to take . . . especially when many a valve failure can disrupt an entire plant operation.

You can avoid trouble and wastefully high maintenance by discerning purchase of valves and fittings of greater suitability, greater dependability. Quality becomes the important specification. That's why it's thrifty buying to depend on the consistent quality of the broad Crane line.

Crane Co., General Offices: 836 S. Michigan Ave., Chicago 5, Ill.
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CRANE

VALVES • FITTINGS • PIPE • PLUMBING • HEATING

For More Information Circle No. 115 on Inquiry Card—Page 17

WASHINGTON REPORT

continued

NO FALTERING AT THE BAR

Significant fact is that the advent of sharper competition does not seem to faze industry. Nobody is running for cover.

To the contrary, there has been a general girding for the contest. For those who are planning to stay in the competition, there has been large investment in new plant and equipment, research into new products, efforts at diversification.

For those who have felt a weakness, there has been a rash of mergers, creating stronger managements and a better competitive position.

These important changes have been taking place without major dislocations. They seem a part of the shift from a war economy to a mixed economy, with the greater part of capacity devoted to peacetime product—but an important slice earmarked for a defense-alert posture.

At no point does a drop in prices appear likely. The wage curve still points up, and the only certain way to lower costs of production has been the development of new products or methods that reduce the amount of labor required.

This is the core of the purchasing agents' current problem—a constant vigil for new materials, product and improved machine.

* * *

LABOR CUTS ITS TAKE IN EMERGENCY

There is some disposition on the part of individual labor unions to take a more reasonable attitude toward wages—but this tendency has only become apparent when the employer has clearly shown that he has been unable to make a profit, and in fact is facing shutdown unless some relief is provided.

In virtually every field of industry, there has been unrelenting pressure for higher wages. It is clear that labor will not give up any of its gains as a contribution toward a competitive drive toward lower prices. Only conditions under which labor will cut their take is where a competitive situation threatens their jobs.

Examples of union agreement to take lower wage payments are relatively few, even though the agreements in two automotive plants, several New England textile mills, and a scattering of other such agreements have been highly significant.

* * *

NOW IT'S UP TO THE VOTERS

Up-coming Congressional elections will be watched sharply to see how far the electorate will go in accepting some of the bitter pills that economic adjustment has brought.

While the overall tone of the economy has been firm, there nevertheless have been some sharp adjustments. There has been an increase in unemployment—there has been a drop in the industrial production index—there has been a drop in corporate profits—there has been a lessening in the volume of business and trade.

To offset these adjustments, the Government has moved in various ways to overcome specific industry problems—local and regional upsets; but basically, it is understood that the adjustments have to be made.

What the Administration depends on for support is the cross-section voter. The appeal will be on the basis that the Administration's policy has brought well-being to the individual and an abatement of the war threat.

DO YOU HAVE ANY QUESTIONS ABOUT LEAD-TREATED STEELS?

QUESTION

What is a lead-treated alloy steel ?

What special advantages does the lead addition impart to the alloy steel ?

In what qualities and forms are lead-treated alloy steels available ?

Does the lead addition influence in any way the heat treatment of alloy steels ?

Does the lead addition affect the mechanical properties of alloy steels ?

What are the machining properties of a lead-treated alloy steel . ?



Where are lead-treated alloy steels most suitably applied ?

ANSWER

It is an alloy steel made to any standard specification but with the addition of lead, usually in the range of 0.15—0.35%.

It improves the machinability, increases productivity and reduces costs.

Any Aristoloy steel can be made with a lead addition and supplied in any of our standard sections.

No. A lead-treated alloy steel responds to heat treatment in exactly the same way as its counterpart without lead.

The addition of lead to any steel does not materially affect its mechanical properties.

Lead-treated Aristoloy steels cut more freely than standard alloy steels, and yield a better surface finish even at higher cutting speeds. Of equal, if not greater, importance is the fact that these steels are less severe on the cutting tools.

Lead-treated Aristoloy steels show to greatest advantage when subjected to complicated or extensive machining operations, or *where it is necessary to machine in the higher ranges of tensile strengths.*

COPPERWELD STEEL COMPANY (Steel Division) WARREN, OHIO

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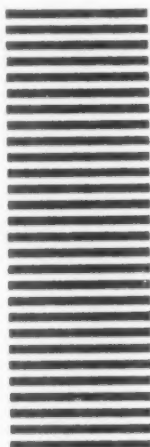
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NEW INFORMATION FOR YOUR

Catalog Files



BOXES (CORRUGATED)

A 16-page 3-color brochure describes facilities for making shipping containers for every packaging need. Leading manufacturers using the company's boxes are listed and case histories of savings made.

Hoerner Boxes, Inc.

Circle No. 1 on Inquiry Card—Page 17

BUFFS

The important construction details in a wide range of buffs designed for every polishing requirement are treated in a 12-page illustrated booklet. Discussed are sisal buffs, cloth buffs and wheels.

Joe-D Buff Co.

Circle No. 2 on Inquiry Card—Page 17

BUS (ISOLATED PHASE)

Booklet B-5906 describes the features and applications of isolated phase bus designed to protect equipment on circuits with high short-circuit capacity. A line for 15 to 69 kv service is described.

Westinghouse Electric Corp.

Circle No. 3 on Inquiry Card—Page 17

CASTINGS (INVESTMENT)

A profusely illustrated book is a guide for metal working executives and design engineers to both the benefits and limitations of the "lost wax" investment casting process. Chart lists various properties.

Midwest Castings Co.

Circle No. 4 on Inquiry Card—Page 17

CHAINS & SPROCKETS

In catalog No. 754, a 64-page illustrated booklet, a complete line of roller chain sprockets is covered. Line includes minimum bore sprockets for rebor-ing as well as finished bore and taper-lock ready for use.

Diamond Chain Co., Inc.

Circle No. 5 on Inquiry Card—Page 17

ELECTRODES (MILD STEEL)

Complete descriptive information with application and procedure data on a line of mild steel and low arc welding electrodes form the subject of a 20-page catalog. There are formulae for estimating welding costs.

Metal & Thermit Corp.

Circle No. 6 on Inquiry Card—Page 17

ELECTRODES (STAINLESS STEEL)

A 16-page data sheet will assist in the selection of the proper grades of welding rod for a given grade of stainless steel. Discussed are two types of fluxes, a-c/d-c titania and d-c lime.

Crucible Steel Co. of America

Circle No. 7 on Inquiry Card—Page 17

ELECTROPLATING

The methods and equipment used for electroplating are covered in detail in a fully illustrated 20-page booklet. It deals with electrochemical treatment, metal cleaning, pickling, acid dipping, drying, etc.

Galvanizing & Plating Equipment Corp.

Circle No. 8 on Inquiry Card—Page 17

EMBLEMS

Hints on how to implement better employee relations through service award programs are contained in a 16-page booklet. Descriptions of emblems suitable for presentation for various services are given.

American Emblem Co., Inc.

Circle No. 9 on Inquiry Card—Page 17

FASTENERS

Special fasteners and parts produced to meet special and exacting requirements are described and illustrated in a 16-page booklet. There are case history briefs on savings from their use.

National Screw & Mfg. Co.

Circle No. 10 on Inquiry Card—Page 17

FLOORS (CONCRETE)

The absorption process method of installing concrete floors is described in a 28-page illustrated booklet in a step-by-step pictorial sequence. Examples of applications are given.

Kalman Floor Co.

Circle No. 11 on Inquiry Card—Page 17

FLUORESCENT LIGHTING

In non-technical language, a "Fluorescent Guide" supplies under one cover a compendium of information on fluorescent lighting. It tells what it is, its advantages, size lamps available, etc.

Sylvania Electric Products, Inc.

Circle No. 12 on Inquiry Card—Page 17

FORK TRUCKS

A preventive maintenance chart for electric fork trucks shows the proper steps to be taken for daily, weekly and monthly inspections. Each chart covers eight weeks of truck operation. It is illustrated.

Lewis-Shepard

Circle No. 13 on Inquiry Card—Page 17

GEARS, SPROCKETS

Details on planning procedures, engineering, facilities, testing and inspecting processes in the making of gears, sprockets, shafts, bronze castings and similar parts are contained in a 24-page brochure.

Penn Machine Co.

Circle No. 14 on Inquiry Card—Page 17

KNOBS

Catalog E deals with a line of standard control and electronic molded plastic knobs. There are actual size photos of each knob and full scale engineering drawings, with data, to facilitate selection.

Romar Plastics, Inc.

Circle No. 15 on Inquiry Card—Page 17

LUBRICATION (DIESEL ENGINES)

Written for everyone interested in the lubrication of diesels, Technical Bulletin B-1 discusses diesel principles and design, types of engines in use, operating cycles, and choice of correct diesel lubricants.

Sun Oil Co.

Circle No. 16 on Inquiry Card—Page 17

MATERIALS HANDLING

By writing on business letterhead, a 32-page booklet on various types of equipment and structures for handling coal, ore and other bulk materials is available. All operating features are discussed.

Dravo Corp., Crane & Bridge Dept.

Circle No. 17 on Inquiry Card—Page 17

MOTOR DRIVES

A multi-color catalog, M-543, describes completely the design of a fractional hp variable speed motor drive. All operating features are outlined. Details are also supplied of its "threaded" spiral lubrication system.

Reeves Pulley Co.

Circle No. 18 on Inquiry Card—Page 17

NAILER

A nailing machine for woodworking plants, mass-producing boxes, skids, pallets and other units that require high-speed output is described in bulletin N-454. It is electronically controlled, hydraulic powered.

G. M. Diehl Machine Works, Inc.

Circle No. 19 on Inquiry Card—Page 17

pH INDICATORS

Bulletin Q1304 treats of complete instrumentation for pH measurement and automatic control. It contains drawings and photos of pH recording and controlling instruments on specific processes.

The Bristol Co.

Circle No. 20 on Inquiry Card—Page 17

PLASTICS & RUBBER PRODUCTS

Facilities for turning out a wide variety of precision parts in rubber or plastics are described in a 16-page 3-color catalog. The company's services for solving special industrial problems are listed.

General Tire, Industrial Products Div.

Circle No. 21 on Inquiry Card—Page 17

PRESSES (DOUBLE CRANK)

Specifications for a line of straight side double crank presses, 50 through 300-ton, are contained in bulletin 64-H. Described are the line's enclosed design, box-type slides, low inertia clutch and clutch control.

Niagara Machine & Tool Works

Circle No. 22 on Inquiry Card—Page 17

PRESSES (KNUCKLE JOINT)

Catalog 12-B lists detailed specifications for more than 40 standard sizes of single, double and non-geared knuckle joint presses. Various types of clutches are illustrated. Special-purpose presses are described.

E. W. Bliss Co.

Circle No. 23 on Inquiry Card—Page 17

PUMPS

Catalog I-54 has 108 pages of information on various types of industrial pumps. Construction features and performance are discussed. There is also useful information on liquid materials handling problems.

The Deming Company

Circle No. 24 on Inquiry Card—Page 17

RADIATION & PROTECTION

A profusely illustrated 56-page catalog is a comprehensive source of information on radiation and protection. It has informative sections on x-ray accessories, film systems and refrigeration apparatus.

Bar-Ray Products, Inc.

Circle No. 25 on Inquiry Card—Page 17

RUBBER PRODUCTS

Industrial rubber products of every description, including V-belts, transmission belts, hose, molded products, pipe flanges, etc., are the subject of catalog 25-C. It is arranged for quick reference purposes.

Raybestos-Manhattan Inc., Manhattan Rubber Div.

Circle No. 26 on Inquiry Card—Page 17

**Circle Card Opposite Page 17
to Obtain These Catalogs
Additional Catalogs on Page 20**

to cut your V-Belt costs--

--just make this
simple test!



Bend *any* V-Belt that has *straight sides* (Fig. 1). As the belt bends, *feel the sides bulge out* (Fig. 1-A). Clearly, the bulging sides are forced to press *unevenly* against the V-pulley—and this *concentrates* the wear at the points shown by arrows (Fig. 1-A). Naturally, this means shorter life for the straight-sided V-Belt.



Now bend the Belt with **CONCAVE SIDES...**

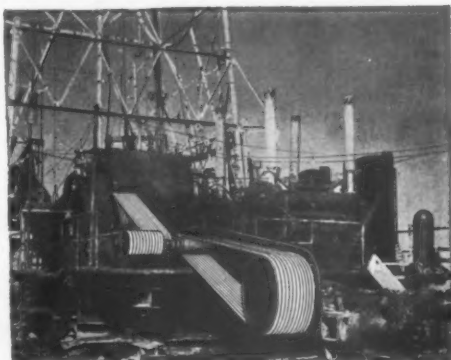
(U.S. PAT. 1813698)

. . . the Gates **VULCO ROPE** (Fig. 2)



You find that the **CONCAVE SIDES** *fill out* and become perfectly straight. They thus press *evenly* against the V-pulley (Fig. 2-A). All wear is distributed *uniformly* across the *full width* of the GATES VULCO ROPE—and this means *longer belt life* and *lower belt costs* for you!

When you buy V-Belts, be sure to get the V-Belt with the **CONCAVE SIDES...the GATES VULCO ROPE!**



Typical Gates Vulco Rope Drive—Gates V-Belts are built with Concave Sides to insure longer belt wear.



REG. U. S. PAT. OFF.

VULCO ROPE DRIVES

THE GATES RUBBER COMPANY
DENVER, U.S.A.

• Gates Engineering Offices and Jobber Stocks are located in all industrial centers of the United States and Canada, and in 70 other countries through-out the world.

CS-343

SCAFFOLDING

The principle of assembly of a scaffolding system that uses a patented slip-fit arrangement, which eliminates nuts, bolts, pins or tools, is shown in a 12 page bulletin. System reduces parts requirements.

Sharon Steel Corp., Brainerd Steel Div.

Circle No. 27 on Inquiry Card—Page 17

STEEL (LEAD BEARING)

An engineering memorandum No. 12 (3 pp) discusses the many advantages of a free machining, lead bearing steel which machines at speeds much faster than those used for common screw stocks. Tables are supplied.

Peter A. Frasse & Co., Inc.

Circle No. 28 on Inquiry Card—Page 17

STEEL CONSTRUCTION

The company's manufacturing and engineering services in the field of steel construction are described in a 44-page catalog. They include weldments and machined work for the steel, chemical and processing industries.

Treadwell Construction Co.

Circle No. 29 on Inquiry Card—Page 17

SUB-CONTRACTING

A 12-page, 2-color booklet details contract manufacturing service available to industry. Fully illustrated, many specialized machine tools are shown in operation as well as finished products made.

Bridgewater Machine Co.

Circle No. 30 on Inquiry Card—Page 17

SWAGING MACHINES

A full description of the functions and development of the art of swaging is contained in a 42-page illustrated catalog. Swaging machines, dies, fixtures and available accessories are listed.

The Torrington Co.

Circle No. 31 on Inquiry Card—Page 17

SWIVEL JOINTS

Ball-bearing swivel joints as well as loading racks, manifold lines, all-metal marine and barge hose and flexible aircraft assemblies are covered in catalog G-4. Typical industrial applications are given.

Chiksan Co.

Circle No. 32 on Inquiry Card—Page 17

TEMPERATURE REGULATORS

Bulletin S-6 is a comprehensive engineering treatise on thermostatic temperature regulators. It explains where and when to use direct acting, reverse acting and 3-way units and lists engineering specifications.

Lawler Automatic Controls, Inc.

Circle No. 33 on Inquiry Card—Page 17

TOOLS

A complete line of load-tested clamps, chisels, punches and masonry drills is the subject matter of 36-page illustrated catalog No. 65. It contains full selection-application information.

The Cincinnati Tool Co.

Circle No. 34 on Inquiry Card—Page 17

TORCHES

Catalog ADC 702B deals in 36 pages with a complete line of torches and tips for oxyacetylene cutting and welding. Complete information is supplied through well planned illustrations, charts and text.

Air Reduction Sales Co.

Circle No. 35 on Inquiry Card—Page 17

TRANSFORMERS (LUMINOUS TUBES)

An 8-page brochure (GEA-5859C) discusses a full line of luminous tube transformers for indoor and outdoor uses. Covered are brickbat and indoor hangers, core-and-coil and display sign transformers.

General Electric Co.

Circle No. 36 on Inquiry Card—Page 17

VALVES

Provided in a 42-page catalog are selection and capacity data for complete specification of air, gas, steam and liquid safety and relief valves in pneumatic or hydraulic units. Many sizes and types are covered.

Kunkle Valve Co.

Circle No. 37 on Inquiry Card—Page 17

V-BELT DRIVES

A 76-page illustrated multi-V belt engineering handbook, features a convenient guide to the design of standard and high capacity drives. Also included are data on selection, engineering and installation.

B. F. Goodrich Co.

Circle No. 38 on Inquiry Card—Page 17

WAXES

A 22-page booklet supplies descriptions and physical data of various waxes—beeswax, cranauba, wax-durez resin blends, candellila, ceresine, japan, ozokerite, molding waxes, montan, ouricury, palm and spermaceti.

Frank B. Ross Co.

Circle No. 39 on Inquiry Card—Page 17

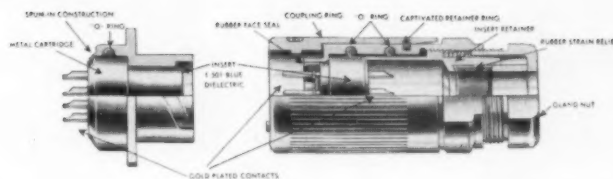
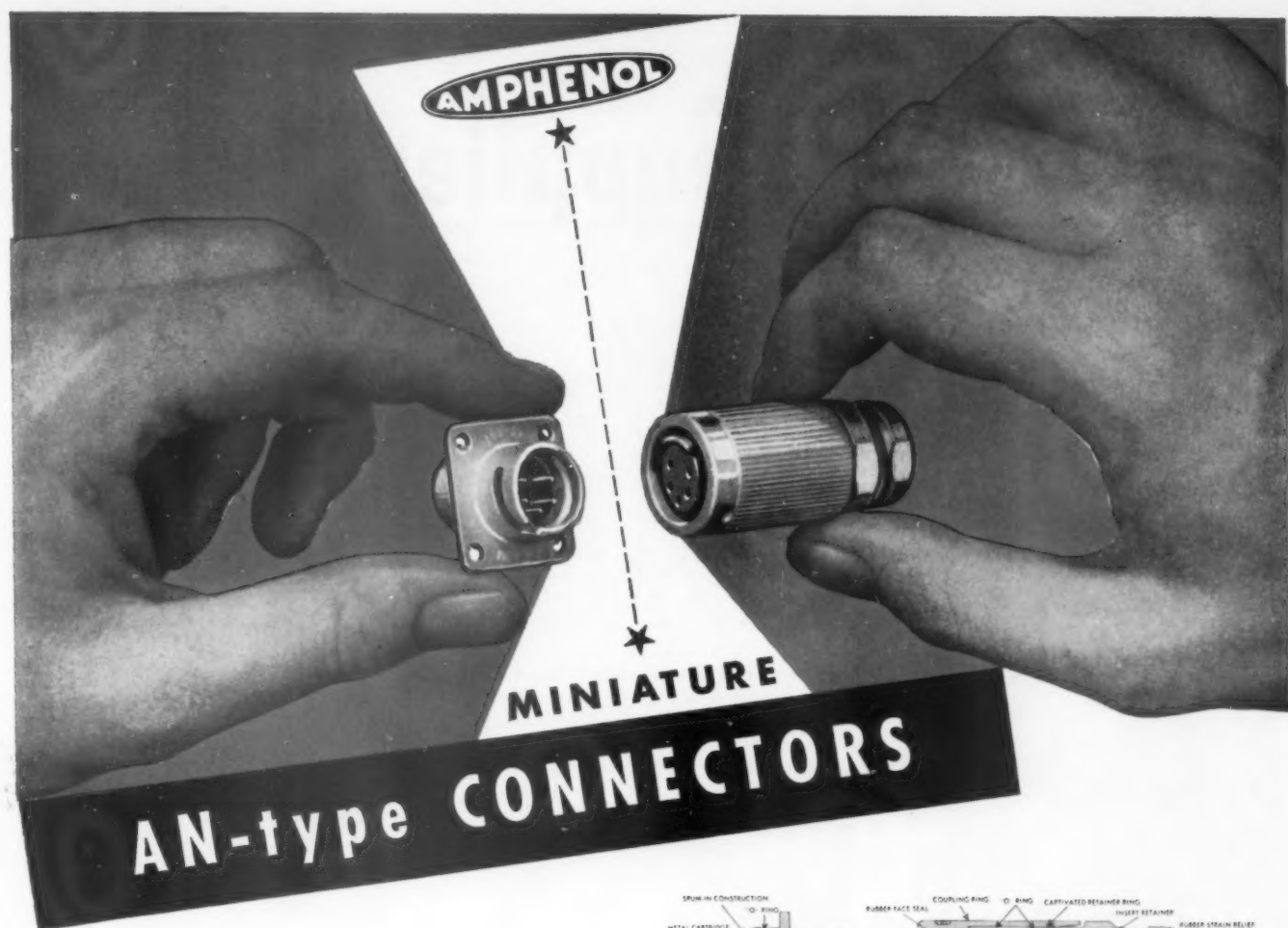
WELDING, CUTTING

Specifications and applications of a line of cutting torches and tips, welding torches and tips, adaptors, fittings, wrenches, regulators, cutting and welding outfits are contained in catalog No. 54E.

The K. G. Equipment Co.

Circle No. 40 on Inquiry Card—Page 17

**Circle Inquiry Card Opposite Page 17
to Obtain These Catalogs**



Design engineers have long requested miniature version of standard AN connectors. And here is the answer: the new AMPHENOL 165 series of miniature AN-Type connectors have the *identical electrical qualities* of standard AN's compressed into only *one-third* the weight! Now designers of electronic equipment requiring AN connectors can utilize the 165 series instead and show substantial savings in both weight and space.

The 165 series are available in two connector sizes and six contact configurations. The small size is obtainable in 5, 9 or 12 contacts; the "large" size in 11, 14 or 24 contacts—all have male or female inserts in plug or receptacle.

For more complete information about the 165 series, write and request "Amform 2397."

SPECIAL FEATURES:

- ★ $\frac{1}{3}$ the weight of standard AN connectors
- ★ Pressure-proof
- ★ Waterproof, mated or apart
- ★ "O" ring sealers
- ★ Spun-in sandwich construction on female connectors
- ★ Aluminum shells with *hard-cote* grey anodic finish
- ★ Gold-plated contacts
- ★ Famous AMPHENOL 1-501 blue dielectric
- ★ Unique built-in cable strain relief

1830 S. 54th Ave., Chicago 50, Illinois



In Canada: AMPHENOL CANADA, LTD.

AMERICAN PHENOLIC CORPORATION

For More Information Circle No. 118 on Inquiry Card—Page 17

NEWS OF YOUR Suppliers



C. L. Thompson

The Buda Co., Harvey, Ill., a division of Allis-Chalmers Manufacturing Co., has named C. L. Thompson as sales manager of its Materials Handling Division. He was formerly general manager of Buda's Oregon branch.

The Detroit sales office of Taft-Peirce Manufacturing Co., Woonsocket, R. I., has moved to 10243 Puritan Ave.



G. A. Bentley

Townsend Co., New Brighton, Penna., has appointed George A. Bentley as manager of sales for its Central Division. Mr. Bentley will headquarter in Detroit.

Insulation Manufacturers Corp., Chicago, has named Manufacturers Specialties Co., Milwaukee, as its representative in that area.

Federated Metals Division, American Smelting and Refining Co., New York, has appointed Theodore H. Heemstra as a technical sales engineer in its Eastern sales department.



R. Hoffman

Robert Hoffman has been named western regional manager for the Electro Dynamic Motor-Generator Division of General Dynamics Corp., Bayonne, N. J.

Com-Air Products, Inc., Los Angeles, has opened a new eastern office at 5886 Rhode Island Ave., Cincinnati. Bernard L. Rice, recently appointed sales engineer and representative, will operate from the new office.

Three new manufacturers' representatives have been announced by Ready Tool Co., Bridgeport, Conn. They are; Roger W. King, Meriden, Conn.; B. S. Meade Co., Union City, N. J.; and Herren & Sims Co., Cleveland, Ohio.

Harry J. Duffy has been named manager of sales in the Wisconsin, Minnesota and Michigan territories for the Trent Tube Co., East Troy, Wis.



R. J. Dervey

The new general sales manager of American Hoist & Derrick Co., St. Paul, Minn., is Ray J. Dervey.

Winsmith, Inc., Springville, N. Y., has named John E. Sixt as sales manager, and Richard E. Feldman as assistant general manager.



L. J. Clarke

The appointment of L. Jack Clarke as general sales manager, Leschen Wire Rope Division, has been announced by the St. Louis, Md., division of the H. K. Porter Co., Inc., New York.

Motorists: here's proof...

Gulf's cleaner-burning, super-refined gasoline solves today's No. 1 engine problem!



Laboratory tests promised...

... these immediate and lasting benefits from this new, super-refined fuel:

More complete engine protection than from the so-called "miracle-additive" gasolines. Why? Because Gulf refines out the "dirty-burning tail-end" of gasoline (the No. 1 troublemaker in high-compression engines)—and then treats this new Super-Refined NO-NOX to give it a complete range of protective properties. It protects every part it touches against carbon, rust, gum.

Extra gas mileage in all your everyday, short-trip, stop-and-go driving.

No knock, no pre-ignition. Why? Because the anti-knock power of new Gulf NO-NOX has been stepped up to an all-time high.

Stall-proof smoothness. Instant starts, too—and fast, fuel-saving warm-up.

That's why new Super-Refined Gulf NO-NOX gives your engine more power-with-protection than you've ever known.



Road tests proved...

These cars, powered by New Gulf No-Nox, actually performed better than new... after 15,000 miles!

True! After 15,000 miles per car—covering all conditions of city and country driving—Gulf test cars showed these results:

- Higher-than-new horsepower!
- Better-than-new on gasoline mileage!
- And not a single trace of carbon knock or pre-ignition at any time—even on the steepest mountain grades!



COMPLETELY NEW! SUPER-REFINED
New Gulf No-Nox

THE HIGH-EFFICIENCY GASOLINE

For More Information Circle No. 119 on Inquiry Card—Page 17



G. W. Brown

George W. Brown, executive engineer of the **Wagner Electric Corp., St. Louis, Mo.**, has been elected a vice president by the company's board of directors.

Eureka Boiler Works, Eureka, Calif., has been appointed to sell and service the fork-lift trucks, straddle carriers and other materials handling equipment manufactured by the **Industrial Truck Division of Clark Equipment Co., Buchanan, Mich.**

W. Dee Shepherd has been named sales manager of the **Atomic Power Division, Westinghouse Electric Corp., Pittsburgh.**

Dr. Wayne E. Kuhn has been named general manager of the newly-created Research and Technical Department of **The Texas Co., New York.**



M. Adler

Marty Adler, former representative for **Plymouth Rubber Co., Inc., Canton, Mass.**, has been named sales manager of the firm's Sundries Division.

The William Powell Co., Cincinnati, has made William Morrison a sales representative. He will serve industry in the New York area.

G. H. Weight is now southwest district sales manager of the **Tubular Products Division, The Babcock & Wilcox Co., Beaver Falls, Penna.** He will be in charge of the division's sales offices in Houston, Texas, and Tulsa, Okla. His territory will include Texas, Oklahoma, Arkansas, Mississippi, Louisiana and southern Kansas.

The De Laval Steam Turbine Co., Trenton, N. J., has appointed Beverly Houston as assistant controller.

E. N. Cundiff has been appointed manager of the Toledo branch of the **Graybar Electric Co., New York.**

Air Placement Equipment Co., Kansas City, Mo., has named William F. Rutherford as eastern field engineer.



C. J. Chapman

National Carbon Co., a division of Union Carbide and Carbon Corp., New York, has named C. J. Chapman as general sales manager, Industrial Products. Formerly Chicago district sales manager, Mr. Chapman will headquarter in the general offices in New York.

The establishment of four new sections and other changes in the Development and Research Division of the **International Nickel Co., Inc., New York,** have been announced. The new sections are: Constructional Alloy Steels Section, with H. V. Beasley in charge; Electroplating Section, under Clarence H. Sample; Inco Nickel Alloys Development Section, with T. E. Kihlgren; and Stainless Steel and Heat-Resistant Alloys Section, under Dr. V. N. Krivobok. In addition, W. Z. Friend has been appointed to succeed F. L. LaQue, vice president and manager of the division, as head of the Corrosion Engineering Section; Dr. T. P. May and H. T. Paterson have been made technical manager and operational manager of the Corrosion Testing Station near Wilmington, N. C.; and W. H. Sparr, Jr., has been named to succeed Mr. Beasley as head of the Technical Field Section in Pittsburgh.



J. W. Dickey

James W. Dickey has been named president of the **Ohio Hoist & Mfg. Co., Cleveland,** and **Alcaloy Inc., Trenton, N. J.**

The appointment of F. C. Tucker as manager of Eastern sales for the Plastics Department has been announced by the **General Electric Co., Pittsfield, Mass.** The position is a newly-created one and covers New York, Pennsylvania and the Atlantic Seaboard.

Robert M. Miller and Roy C. Heinz have been named eastern and western divisional sales manager for the **Cullman Wheel Co., Chicago.** Mr. Miller will operate out of Chicago and cover the territory east of the Mississippi, excluding Illinois and Wisconsin. Mr. Heinz will handle the territory west of the Mississippi and Illinois and Wisconsin.



R. V. Bennett

Plume & Atwood Manufacturing Co., Waterbury, Conn., has announced the appointment of Ronald V. Bennett as general sales manager for the company's Fabricating Division.

Additional News of Your Suppliers
will be found following the
Industrial Development section

VICTOR

IT PAYS TO SEE VICTOR

VICTOR

*Dependable Name in
Chemicals
for 36 Years*



HOLD THE COLD

Makers of facial tissue have a double problem. Their product must be "strong enough to hold a sneeze . . . absorbent enough to hold a cold." To get needed "wet-strength" in these tissues, paper makers use acid-setting resins to make the tissue-paper fibers stick together. As a catalyst for these resins, ammonium phosphates are required. *It pays to see Victor.*

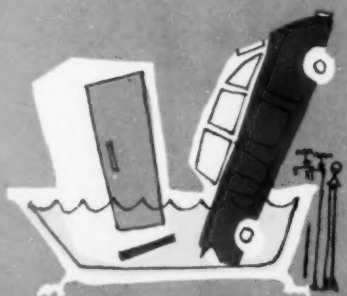
AMMONIUM PHOSPHATES—Typical Uses: Ammoniated dentifrices, soda cracker pH control, catalyst for resins, chrome dyeing of wool, one-bath dyeing of Dacron-wool blends, flame-proofing, plant nutrient solutions. Manufacture of yeast, vinegar, bread improvers, and alcohol. Acid cleaner for metal.



LET'S KEEP 'EM ROLLING

Better-than-ever mileage from motor oil is the result of new oil additives. Phosphorus pentasulfide (P_2S_5) is an important intermediate in the manufacture of these additives, but until recently it lacked uniformity, was frequently off-color, and contained specks. Victor research overcame these disadvantages by preparing P_2S_5 in a new manner—by distillation. Now, phosphorus pentasulfide is speck-free, uniform and a brilliant canary-yellow color . . . important advantages in the production of "golden-colored" motor oil. Another instance where industry has found . . . *it pays to see Victor.*

PHOSPHORUS PENTASULFIDE—Typical Uses: Intermediate in the production of thiophosphates for oil additives, flotation agents, insecticides, and other chemicals.



AN ACID BATH THAT WORKS WONDERS

Painting metal products such as refrigerator shells, automobile bodies and the like is no easy job. Rejects due to chipping or blistering of painted surfaces can be costly. Leading manufacturers eliminate this problem by treating the metal to a bath containing Victor phosphoric acid. This bath not only renders the metal rust-resistant, but provides an "etched" surface that furnishes a perfect bond for paint. If you finish metal, you'll find *it pays to see Victor.*

PHOSPHORIC ACID—Typical Uses: Manufacture of yeast, sugar, soft drinks, gelatin and pharmaceuticals. Rust-proofing, chemical polishing, petroleum refining. Manufacture of phosphates, glue, ceramics, metal-treating compounds, and fertilizers.



"WELL TAN MY HIDE!"

Leather tanners count on Victor sodium formate to speed tanning time. When sodium formate is added to chrome tanning solutions, the chrome liquors are stabilized; rapid, uniform penetration of the leather takes place; fixation is increased and more chrome is exhausted from the solution. In addition to these advantages, the leather has greater smoothness and fullness. Sodium formate is one of the most effective masking agents for chrome tanning. Tanners, too, agree that *it pays to see Victor.*

SODIUM FORMATE—Typical Uses: Chrome tanning, neutralization of leather, wallpaper printing, plating baths, reducing agent, blueprint developers, neutralizer for carbonized wool.



IT ALL COMES OUT IN THE WASH

Combine soap with hard water and you're asking for trouble! Soap plus hard water forms insoluble curds which give clothes that "grey" look. In time, these curds also tend to "gum up" automatic washing machines. To prevent this formation, makers of automatic washing machines recommend synthetic detergents. Most of these detergents contain sodium tripolyphosphate. Both "tripoly" and tetrasodium pyrophosphate have outstanding water-softening action and detergent qualities. That's why "soapers" use them... they help homemakers get a cleaner, sweeter, whiter wash. Here's a case where another industry finds *it pays* to see Victor.

SODIUM TRIPOLYPHOSPHATE—Typical Uses: Soap builder, manufacture of detergents and water softeners, purification of china clay, deflocculant in raw cement slurries, conditioning of oil drilling muds, anti-pitch agent in paper manufacturing.



BRILLIANT ON THE IVORIES

When it comes to brilliant smiles, dentifrice manufacturers come to Victor. That's because Victor phosphates are used as the polishing agent in most tooth-powders and pastes. Victor research pioneered the development of di- and tricalcium phosphates as polishing agents. Foremost dentifrice manufacturers capitalize on Victor's expert knowledge of their needs by specifying these special phosphates, the first to merit the approval of the Council on Dental Therapeutics of the American Dental Association. Another example where *it pays* to see Victor.

DICALCIUM PHOSPHATE, VICTOR—Typical Uses: Mineral supplement in cereals and foods. Pharmaceuticals, polishing agent in nonalkaline toothpastes and powders. (U.S. Patent 2018410)

IT PAYS TO SEE ...

VICTOR

Chemicals
for 30 Years

VICTOR CHEMICAL WORKS

147 West Jackson Boulevard, Chicago 4, Illinois

plants and offices of VICTOR CHEMICAL WORKS



if **FOODS** are your special interest
.....
please turn to the next page

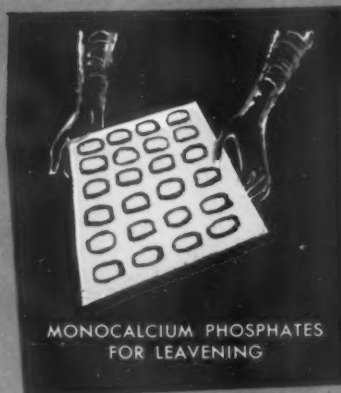
HAD YOUR PHOSPHATES LATELY?

Of course you have! Take your morning toast or luncheon rolls, for example. Chances are they were made from flour enriched with calcium phosphate, with yeast cultivated with ammonium phosphate and with salt kept free-flowing by a trace of tricalcium phosphate. What's more, phosphates were in your sugar, condensed milk, process cheese and a score of other food favorites, including your soft drink.

If you manufacture or process food, you're probably familiar with the versatility of phosphates. Also, you're probably aware of Victor's outstanding leadership in phosphates. Victor's plant facilities, research staff and sales service organization are yours to use. The next time you have a product or process problem that a phosphate might solve, call on us. You'll find that it *pays* to see Victor.

VICTOR SERVES THE FOOD INDUSTRY

AMMONIUM PHOSPHATES—Manufacture of yeast, vinegar, yeast foods, pH control of soda crackers, bread improvers . . . CALCIUM PHOSPHATES—Mineral enrichment, leavening agents for self-rising flour, self-rising corn meal, pancake flour and prepared mixes; baking powder. To prevent caking of salt, soda, and sugar . . . IRON PHOSPHATES—Iron enrichment . . . PHOSPHORIC ACID—Manufacture of yeast, sugar, soft drinks, imitation jellies, gelatin . . . SODIUM ACID PYROPHOSPHATE—Baking acid in prepared mixes, doughnuts, flours, ingredient in baking powders.



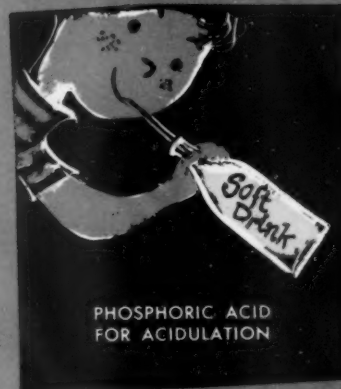
MONOCALCIUM PHOSPHATES
FOR LEAVENING



DISODIUM PHOSPHATES
FOR BUFFERING



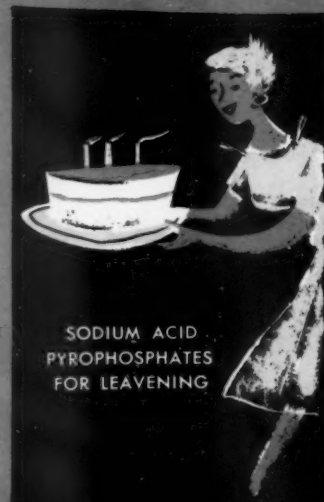
TRICALCIUM PHOSPHATE
TO PREVENT CAKING



PHOSPHORIC ACID
FOR ACIDULATION



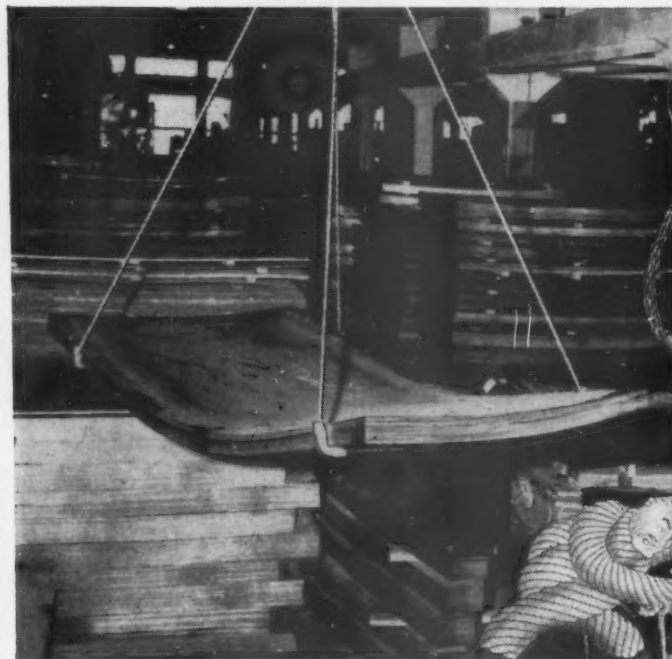
IRON PHOSPHATES FOR
MINERAL ENRICHMENT



SODIUM ACID
PYROPHOSPHATES
FOR LEAVENING



You Prove How Tough Tuffy Is!



Tuffy HOIST LINES

The Perfect Partner for Tuffy Slings—that's Tuffy Hoist Line. It's a specially developed line that matches Tuffy Slings in flexibility and all-around toughness. Tuffy Hoist Line absorbs load shocks instead of fighting them ... gives you *extra* weeks of service on the job!

Easy To Order! When you buy Tuffy Hoist Line, you put an end to complicated specifications. Just state length, diameter and the name—"Tuffy." Next time, reeve your cranes of all types with Tuffy Hoist Line!

Your Tuffy Distributor —
Equipped to Give You Service NOW!

No Costly Waiting! When you need replacement rope, you often want it fast—and your Tuffy distributor is *always* ready to handle those hurry-up orders! The reason? He's backed up by a nearby Union Wire depot or warehouse to keep stocks full. For speedy service, call your Tuffy distributor *first*.



Specialists in High Carbon Wire, Wire Rope and Braided Wire Fabric



FREE! 3-FT. TUFFY SLING
LETS YOU TEST
TUFFY'S SUPER STRENGTH!

Tuffy SLINGS

We'll Give You A Tuffy Sling at absolutely no cost or obligation to you! Why are we making an offer like this? Because we want you to *prove to yourself* that Tuffy is the toughest sling you can buy.

Torture-Test Your Free Tuffy Sling! The patented, machine braided wire fabric construction takes treatment that causes ordinary rope slings to fail!

Loop It...Knot It...Kink It...Jerk It! You'll find your Tuffy Sling is extra-flexible to resist kinking—and if you *can* kink it, you can straighten it out without material damage!

Get Your Free Tuffy Sling and prove the difference Tuffy can make for you in *service and savings!*



TEAR OFF AND MAIL COUPON NOW

Union Wire Rope Corporation
2282 Manchester Ave., Kansas City 26, Mo.

At no cost or obligation to me, please rush the material I have checked:

- ☐ FREE 3-Ft. Tuffy Sling!
- ☐ FREE Sling Handbook and Rigger's Manual, Featuring 12 Tuffy Factory-Fitted Types!
- ☐ Name and Address of Tuffy Distributor Nearest Me!

FIRM NAME _____

BY _____ TITLE _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____

For More Information Circle No. 121 on Inquiry Card—Page 17

The Tube Line That Rates a Buy-Line!

STEEL
GM Tubing

IN THE DESIGN and building of the products shown here, GM Steel Tubing plays an important part—either for the passage of liquids or gases, or as part of the mechanical structure. And these are but a few of the thousands of manufactured items that use low-cost steel tubing in place of more expensive materials. Examine your own requirements! You, too, may find you can *improve design, speed production, and cut costs* with "The Tube Line That Rates a Buy-Line"—GM Steel Tubing!

SEE SWEET'S
PRODUCT
DESIGN FILE **1a**
Ro

SEND FOR FREE BROCHURE
This new, illustrated, fact-packed brochure tells how GM Steel Tubing can help solve design and production problems. Send today for your free copy.

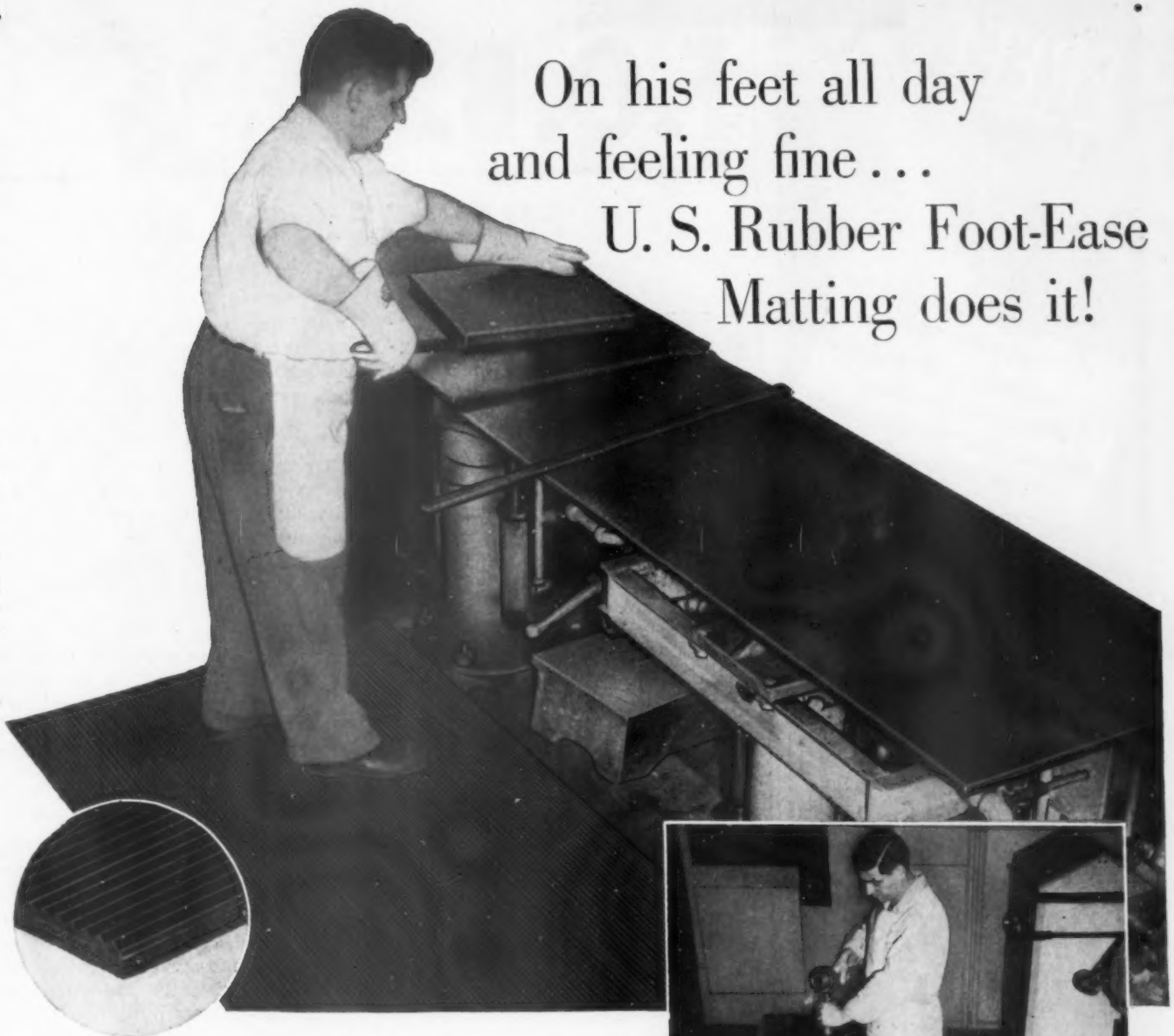
ROCHESTER PRODUCTS
DIVISION OF GENERAL MOTORS, Rochester, N. Y., U.S.A.

GM STEEL TUBING

ALSO MANUFACTURERS OF ROCHESTER CARBURETORS AND ROCHESTER CIGAR LIGHTERS
For More Information Circle No. 122 on Inquiry Card—Page 17

On his feet all day
and feeling fine...

U. S. Rubber Foot-Ease
Matting does it!



Standing continuously on hard floors fatigues and slows down 3 out of 4 workers. Resultant foot trouble costs management hundreds of millions of dollars a year in lost man-hours. United States Rubber Company engineers tackled this problem and developed U. S. Foot-Ease Matting. Made of tough, durable rubber compound backed up by springy sponge rubber, U. S. Foot-Ease "cushions" the feet from the floor, relieves strain on leg and foot muscles, eliminates "aching arches."

U. S. Foot-Ease provides *sure footing* and is available in a special ribbed pattern or a pyramid surface design. It can easily be cut to any desired dimensions from 25-yard rolls of 36-inch width. Available at any of our selected distributors or call one of our 25 District Sales Offices, or write to address below.



Enlarged section (above, left) shows the ribbed design of U. S. Foot-Ease matting upon which both workers are standing.

"U. S." Research perfects it
"U. S." Production builds it
U. S. Industry depends on it



UNITED STATES RUBBER COMPANY
MECHANICAL GOODS DIVISION • ROCKEFELLER CENTER, NEW YORK 20, N. Y.

Hose • Belting • Expansion Joints • Rubber-to-metal Products • Oil Field Specialties • Plastic Pipe and Fittings • Grinding Wheels • Packings • Tapes
Molded and Extruded Rubber and Plastic Products • Protective Linings and Coatings • Conductive Rubber • Adhesives • Roll Coverings • Mats and Matting

For More Information Circle No. 123 on Inquiry Card—Page 17

OCTOBER, 1954

31

FREE!

ULBRICH
Stainless Steel
Strip calculator
takes the guesswork
out of buying!

SPECIALISTS in small orders of Strip, flat wire and other stainless steels—a foot, a pound or up—converted to your exact requirements

The BIGGEST little Converting Mill in the country wants you to have its copyrighted stainless strip calculator.

Example: Your engineers want 1000 ft., .062" gauge, 1/8" wide. What **WEIGHT** will you order? Calculator gives quick answer—188 lbs.

For free calculator send your name on your letterhead or on the margin of this page to:

ULBRICH
Stainless Steels
WALLINGFORD 3, CONN.
Phone: Wallingford 9-7771

For More Information Circle No. 124
on Inquiry Card—Page 17

F.O.B.



FILOSOFY OF BUYING

PURCHASING men who are concerned with functional packaging may be interested in a new waterproof watch which comes to market in a plastic bag of water, sealed in at the factory. There's your acceptance test, done right up in the original package.

HOBBYIST I. V. Cohen, Purchasing Agent of the Toledo, Peoria & Western Railroad, combines two of his interests—railroading and philately—in his contribution to the newly established "Tee Pee" historical museum at Effner, eastern terminus of the line, near the Illinois-Indiana state line. He has prepared a frame of U.S. postage stamps depicting railroad scenes.

ACCORDING to "Reno Round-up", a column in the *Reno State Journal*, P.A. Marvin Berg of the Mapes Hotel in that city was puzzled one day recently when a veritable avalanche of champagne salesmen descended upon his office. Within the space of an hour, it seemed that every purveyor of the bubbly water was knocking at his door with an eager sales pitch. Seeking the cause of this sudden specialized interest, he learned that the announcements of the new Sky-room revue had just gone up in the lobby, mentioning, among other attractive features, that stripteuse Lili St. Cyr would use champagne in the bathtub scene of her act, and the enterprising vendors had sensed a new mass market for their product. In some fields, apparently, salesmen follow bathtubs instead of smokestacks in building up their prospect lists.

BUSINESS Columnist Merryle Stanley Rukeyser looks to the revised tax laws as a possible force for raising the standard of business ethics, pointing out that the high rates in effect since 1939 put a

premium on expense accounts and "sugar coated commercial bribery" as legitimately deductible business expenses. Refreshingly, Mr. Rukeyser does not put the blame for such practices on the donee. Rather, he cites as an example of a "high sense of ethics" the case of a purchasing agent who received—and accepted—a handsome silver service from one of his suppliers and promptly stopped buying from that source, with the explanation, "We can't do business with each other any more. Since you gave me that magnificent gift, which I could accept only from a close friend, we have been on a personal basis, and I make it a rule not to do business with close friends."

"ORCHIDS for the purchasing agent" is the business slogan of newly organized Flower Enterprises, Inc., New York City. Nothing personal is implied. The firm specializes in providing orchids and corsages in quantity and on short notice for business parties, convention dinners, and similar occasions, at budget rates—a boon for the harried buyer charged with making such arrangements, and whose orchid procurement experience has probably been confined to decking out friend wife on birthdays and anniversaries.

REGIONAL business surveys conducted by several of the Purchasing Agents' Associations provide a very useful service—like regional weather reports. But in focussing attention exclusively on the local area there's a danger of becoming somewhat provincial in one's outlook. A recent survey of this kind made in Texas highlights factors of industrial expansion and activity, as might be expected, but also incorporates a warning against complacency. One of the P.A. participants in the survey is quoted as follows:

"On a recent trip to Chicago and the West Coast I was surprised to learn and to see other areas are making progress and are progress minded. My complacent and smug attitude regarding our area economy was jolted. Each area I visited has its own fabulous Houston and 'Big D'. Are we, here, going to be guilty of saying 'Look what we have done' instead of 'Here is what we are going to do' and 'Here is what we are doing'? It is evident to me we are lagging behind in highway and bridge construction and in public works."

Yes, it's a big country. And the correspondent from big Texas postscripts that he is not trying to start an argument.

PURCHASING can be a career, and a pretty stable one. Symington-Gould Corporation recently honored its first 50-year employee. He is W. Harold Pattenden, Purchasing Agent for the Depew, N.Y., plant. Mr. Pattenden started with the company in 1904 as a payroll clerk, at \$4 a week.

A DOLLAR went farther in those days. At a function in Philadelphia the other day, one of the speakers nostalgically recalled the famous "\$100,000 infield" that was making baseball history with the Philadelphia Athletics of that era. "Whenever I think of the valuation placed upon that marvellous aggregation," he said, "I reflect upon the shocking depreciation that has taken place in our currency in the years since then."

CITY P.A. Clifford F. Beeker of Indianapolis, always interested in a penny, was intrigued by the fact that the chief custodian at City Hall was known to everybody by that name. His interest increased when a little research disclosed that the custodian's full name is Gift Penney. And when the TV show "The Name's the Same" likewise exhibited interest, Mr. Beeker decided that he might have stumbled upon a modest gold mine. It is reported by the City Hall reporter of the Indianapolis *Star* that he is said to be going over the entire list of City Hall employees, name by name, and that he has already discovered another member of the custodial staff with the unusual name of Loving Rose.

For More Information Circle No. 125
on Inquiry Card—Page 17→

OCTOBER, 1954

BE SURE
you'll meet the SPECS..
for accurate **ANPT** threads



DEPEND on
PRATT & WHITNEY
ANPT TAPS and GAGES

Here is a Pratt & Whitney Team specifically designed and manufactured to help you produce highly accurate ANPT (Aeronautical National Pipe Taper) Threads that successfully meet the rigid Military Specification MIL-P-7105.

P&W ANPT Taps are made from selected high speed steels, correctly designed, carefully manufactured and expertly heat treated. Width of crest and root flats are controlled to the required close tolerances. They will deliver long wear life and produce threads to ANPT standards consistently.

P&W ANPT Gages check taper, diameter and form of the thread to the specified limits. They tell at a glance if ANPT threads meet the requirements of the specification MIL-P-7105 and will assemble correctly. Four different gage types are supplied. For checking internal threads, a double-end thread plug (L-1 and L-3) and a single-end 6-step plain taper plug are used. For checking external threads, two Tri-Roll Gages, one threaded and the other plain taper, are commonly used.

Two other alternate types for checking external threads are also available. All four are approved by the Air Force, Army and Navy as meeting their inspection requirements.

SEND NOW FOR COMPLETE INFORMATION

First Choice



for Accuracy

PRATT & WHITNEY

DIVISION NILES-BEMENT-POND COMPANY

19 Charter Oak Blvd., West Hartford 1, Conn.

Please send my free copy of P&W ANPT gage Circular No. 549-1.

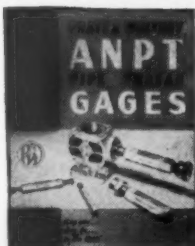
NAME _____

POSITION _____

COMPANY _____

CO. ADDRESS _____

CITY _____ ZONE _____ STATE _____



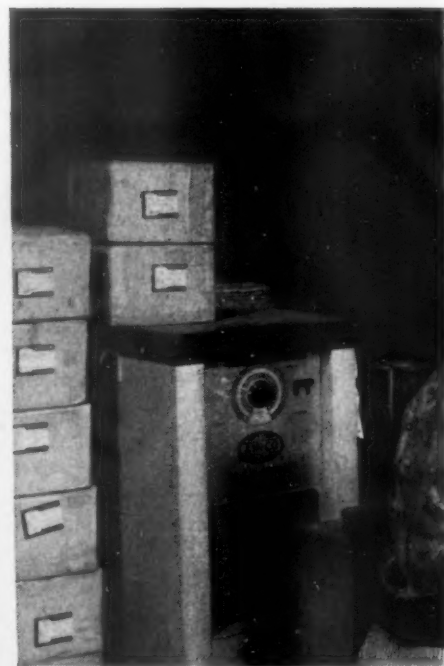
AT THE FRONTIERS OF PROGRESS YOU'LL FIND . . .



Aircomatic enters the mild steel welding field!

Fabricator welds
19,200 steel tanks...
cuts welding costs 41%

with **AIRCOMATIC!**



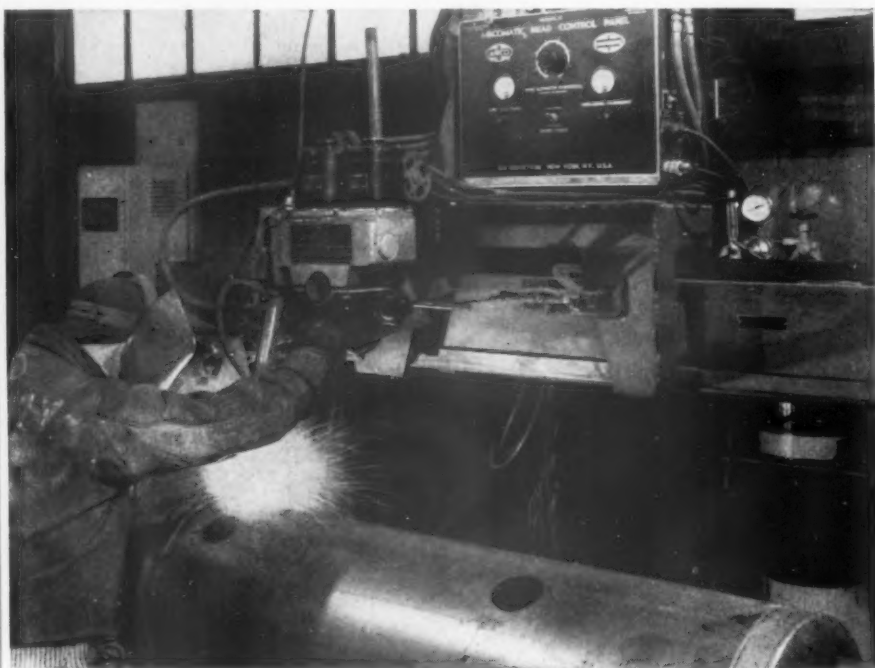
Airco's inert-gas shielded metal arc method, Aircomatic®, has long been the fastest, most effective way to weld "problem" metals like aluminum . . . copper . . . nickel, etc.

Now alert fabricators are employing this method on mild steel, with truly gratifying results.

The Collins Concrete and Steel Pipe Co., for instance, reports that Aircomatic has cut welding time 75% per steel tank — from 15 minutes to 3¾ minutes. On an annual output of 19,200 units, this adds up to a saving of slightly more than 3600 man hours. As a result, labor and overhead costs have been slashed 41%, not including hard-to-compute savings such as reduced handling time and the elimination of weld cleaning.

Aircomatic puts down from 10 to 25 pounds deposited metal per arc hour. This is obviously an increase over most other welding processes. Other advantages add to over-all time savings: good penetration means less joint preparation . . . absence of slag and spatter makes for minimum postweld cleaning and finishing.

If you weld mild steel on a production basis, wouldn't it be a good idea to talk over Aircomatic with an Airco representative? . . . It won't obligate you in any way. Or, if you'd like more information first, simply drop us a note — we'll send you details of the method, and information on how you can cut your production costs.



Collins Concrete and Steel Pipe Co., Portland, Ore., uses Aircomatic to weld the heads on steel hot water heater tanks. Welding time per tank has been cut from 15 minutes to 3¾ minutes.

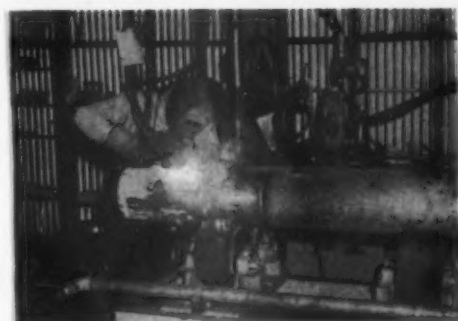
AIR REDUCTION

60 East 42nd Street • New York 17, N. Y.

Products of the divisions of Air Reduction Company, Incorporated include: **AIRCO** — industrial gases, welding equipment, and acetylenic chemicals • **PURECO** — carbon dioxide, liquid-solid ("DRY-ICE") • **OHIO** — medical gases and hospital equipment • **NATIONAL CARBIDE** — pipeline acetylene and calcium carbide • **COLTON CHEMICAL COMPANY** — polyvinyl acetates and alcohols and other synthetic resin products

For More Information Circle No. 126 on Inquiry Card—Page 17

2 more success stories for Aircomatic mild steel welding!



↑ In the next 12 months, Cascade Manufacturing Co. of Portland, Oregon, will produce 12,500 hydraulic cylinder units using the Aircomatic process. Fabricated of SAE 1015 cold finished seamless steel tubing, the completed cylinders must withstand tests at 2600 psi. The uniform, high quality of butt and fillet welds with Aircomatic is evidenced by the fact that leakage on initial test is only 3½%.



↑ Youngstown Steel Car Corp., Niles, Ohio, welds truck dolly wheels from pressed sections of SAE 1020 steel. When company engineers set up production schedules, they allowed 2 minutes welding time per wheel. To their surprise, the two Aircomatic heads weld the 2 wheel sections together at the rim and simultaneously weld a sleeve into the hub — all in 58 seconds.

Divisions of Air Reduction Company, Incorporated with offices and dealers in most principal cities

Air Reduction Sales Company
Air Reduction Pacific Company

Represented Internationally by
Airco Company International

Foreign Subsidiaries: Air Reduction Canada Limited,
Cuban Air Products Corporation

CUSTOMER: *Interplanetary Metal Specialties Corp.*

SPEC: CRDQ 7DD **NO.:** KAJ 66031

Your order designation has a familiar ring to Inland steelmakers. Chances are that each repeat order is handled — from sales to shipping — by the same men who processed the original one.

For, time after time, the same steel is rolled on the same mills by the same men — one advantage of doing business with a completely integrated steel producer with mills in one centrally located plant. (Inland men stick around long enough to really know you, too. Over one-third have been here for more than 15 years.)

So that's why you so often hear your name and not just an order number around our plant. It's another outcropping of our desire to treat each customer's steel problems personally.

INLAND

INLAND STEEL COMPANY
 38 South Dearborn St. • Chicago 3, Ill.

SALES OFFICES: Chicago • Milwaukee • St. Paul
 Davenport • St. Louis • Kansas City • Indianapolis
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PRINCIPAL PRODUCTS: Sheets • Strip • Plates
 Structural Shapes • Bars • Tin Mill Products
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*a household
word at
Inland*



**All work and some play
makes this a smart buy**

6,000-r.p.m. wheel speed is "stopped" by 1/10,000 sec. stroboscopic exposure. (Wheel guard removed to show detail.)

Watch rough grinding problems melt away fast, *safely*... when a CARBOFLEX Depressed Center Wheel goes to work. Undercut and reduce heavy welds, rough off fins and sharp edges, notch and cut off gates and risers, remove surface

defects. Breeze through *any* general purpose roughing, slotting or cut-off operation in record time... with maximum safety. CARBOFLEX Wheels by CARBORUNDUM combine extreme high strength and resistance to cracking with maximum cutting abil-

ity... give you more production at less abrasive cost. Both sides of these strong, fabric-reinforced wheels are knurled. Cut with either side plus the edge. Call your CARBORUNDUM Distributor or Salesman today for a demonstration of this new cost-cutter.

Through application "know-how" and product quality

CARBORUNDUM

REGISTERED TRADE MARK

continually puts more **sense** in your abrasive **dollar**



We put our knows to your grindstone

Three to five years of research, engineering and testing go into the development of a new grinding wheel by CARBORUNDUM... as much as you'll find behind any other precision machine tool in your shop. New resinoid bonds present tricky

engineering problems. The bond is the "tool holder" of the grinding wheel... differs only in that it must automatically release dull or broken grains so that new ones can take over the cutting. New resins are under constant test in CARBORUNDUM's lab-

oratories. Some will become bonds in wheels designed for tomorrow's grinding machines. Meanwhile, your CARBORUNDUM Distributor or Salesman offers a complete line of fast, cool-cutting wheels for today's precision needs. Call him—right now!

Through product quality and application "know-how"

CARBORUNDUM

REGISTERED TRADE MARK

continually puts more **sense** in your abrasive **dollar**



Permanent
 low-cost protection with
"CENTURY" CORRUGATED
ASBESTOS-CEMENT SHEETS

Roofing and Siding Contractor: Standard Asbestos Manufacturing & Insulating Company, Kansas City, Mo.

Here is the plant of the Natural Gas Storage Company of Illinois, Herscher, Ill. "Century" Asbestos-Cement Corrugated is used for the roofing and siding.

"Century" Corrugated is made of two permanent, highly fire-resistant materials—*asbestos fiber and portland cement*—compressed under tremendous hydraulic pressure to make strong, tough sheets for almost every roofing or siding requirement.

It can't burn, rot or corrode. What's more, it resists weather, vermin and insects. There's rarely a need for maintenance and it never needs protective paint. "Century" Corrugated Asbestos is low in first cost and low in application cost . . . easily sawed, drilled and fitted on the job.

Be sure to write us for information about particular applications. We'll rush a reply with complete details.

KEASBEY & MATTISON COMPANY • AMBLER • PENNSYLVANIA

Nature made asbestos . . . Keasbey & Mattison has made it serve mankind since 1873

For More Information Circle No. 129 on Inquiry Card—Page 17



Satisfaction rests on the carton



The Union Corrugated
Containers made for
Sylvania Electric flash bulbs

"go through the mill" in more ways than
one. They must survive a drop test, impact test
and half a dozen other measures of strength and sturdiness before
they are OK'd for delivery. That's why Union boxes deliver the goods—
promptly, economically and, above all, safely.



UNION BAG & PAPER CORPORATION

CORRUGATED CONTAINER DIVISION • Box Plants: Savannah, Ga., Trenton, N. J., Chicago, Ill.

Eastern Division Sales Offices: 1400 E. State St., Trenton 9, N. J. • Southern Division Sales Offices: P.O. Box 570, Savannah, Ga.
Western Division Sales Offices: 4545 West Palmer, Chicago 39, Ill. • Executive Offices: Woolworth Bldg., New York 7, N. Y.

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For More Information Circle No. 131 on Inquiry Card—Page 17→
PURCHASING

Black & Decker Hammers have hundreds of time-and-money-saving uses, piercing concrete to install machines and power lines, as here, or wherever impact is called for.



See where B&D Hammers save you time and money!

New Book shows how!

From drilling in concrete and lagging-down machines to chiseling castings and holing-through walls, B&D Electric Hammers get more jobs done faster, better, cheaper! No other hammer has so many features for comfort and safety. No other hammer gives you so much working power in so little weight at such a low price! Get all the facts! Get this great B&D Hammer Handbook *free!* Page after page of on-the-job photos show how you can save time, cut costs on dozens of jobs in your own operation! Write to: THE BLACK & DECKER MFG. CO., Dept. 607, Towson 4, Md. Meanwhile, ask your B&D distributor for a demonstration!

LEADING DISTRIBUTORS EVERYWHERE SELL



For nearest distributor, see "Tools-Electric."



Black & Decker

PORTABLE ELECTRIC TOOLS



FOR LAGGING-DOWN!



FOR CHANNELING!



FOR SCALING!



FOR SMASHING!



FOR BREAKING!



*With too many carriers at the loading dock,
it was tough getting ANY goods moved...*



*But, now, since the job's done by RAILWAY EXPRESS,
the situation is vastly improved!*

The big difference is

Whether you're sending or receiving...
whether your shipment is big or small...
whether it's by rail or air... for the
best answer to your shipping problem,
call Railway Express first. A complete
shipping service in the American tradition
of private enterprise.

As a contribution in the public interest,
RAILWAY EXPRESS will take your orders for CARE.



...safe, swift, sure

For More Information Circle No. 132 on Inquiry Card—Page 17

DISTRIBUTORS OF INCO PRODUCTS

Mill and Warehouse Service Centers for Inco Nickel Alloys (listed below) and Primary Nickel for alloying purposes.

NORTHEAST & MIDDLE ATLANTIC

Whitehead Metal Products Co., Inc.
Baltimore 5, Md.
Buffalo 7, N. Y.
Cambridge 39, Mass.
Harrison, N. J.
New Haven 13, Conn.
New York 14, N. Y.
Philadelphia 40, Pa.
Syracuse 4, N. Y.

EAST-NORTH-CENTRAL

Williams and Company
Cincinnati 29, Ohio
Cleveland 14, Ohio
Columbus 8, Ohio
Louisville 3, Ky.
Pittsburgh 33, Pa.
Toledo 2, Ohio

MIDDLE WEST, CENTRAL & NORTH

Steel Sales Corporation
Chicago 23, Ill.
Detroit 10, Mich.
Grand Rapids 2, Mich.
Indianapolis 18, Ind.
Kansas City 8, Mo.
Milwaukee 9, Wis.
Minneapolis 13, Minn.
St. Louis 10, Mo.

SOUTHEAST

J. M. Tull Metal & Supply Co.
Atlanta 3, Georgia

SOUTH, SOUTHWEST & MOUNTAIN

Metal Goods Corporation
Dallas 9, Tex.
Denver 2, Colo.
Houston 3, Tex.
New Orleans 12, La.
Tulsa 3, Okla.

PACIFIC COAST & FAR WEST

Pacific Metals Company, Ltd.
Los Angeles 21, Cal.
Phoenix, Ariz.
Salt Lake City 4, Utah
San Diego 1, Cal.
San Francisco 10, Cal.

NORTHWEST

Eagle Metals Company
Portland 12, Ore.
Seattle 4, Wash.
Spokane 24, Wash.

CANADA

Wilkinson Company, Ltd.
Edmonton, Alberta
Vancouver, B. C.

Robert W. Bartram, Ltd.
Montreal 28, Que.

Alloy Metal Sales, Ltd.
Toronto 2, Ont.
Winnipeg, Man.

MEXICO

La Paloma Co. De Metales, S. A.
Mexico, Mexico, D. F.

HAS YOUR PROBLEM ALREADY BEEN SOLVED? Perhaps a man half-way across the country — or even next door — has solved a metal problem similar to the one that's facing you right now. That is why we think you will be interested in reading "Nickelsworth," a quarterly publication reporting new and unusual solutions to industrial metal problems made possible by nickel alloys. To start your complimentary subscription, just send your name and address to Inco.



Knocked Out?

Looks like it. Our friend here has been hunting high and low for corrosion-resisting pipe and a flock of matching fittings.

Where can he look next for the pipe, valves, flanges, gaskets and bolts he needs so badly?

Just where you, we hope, would look first — to your *Inco Distributor salesman*. He is a specialist in corrosion-resisting metals. His warehouses carry a wide variety, including nickel alloys, stainless steels, copper, brass and aluminum. And more individual items than you can shake a stick at! That's why there's always a good chance that he can help you when others can't.

Last time we counted, he had over 20,000 separate items available. Everything from wire of hair-like fineness to eight-inch rod . . . tubing the size of a pencil point to pipe more than 8½ inches in diameter.

There's thin sheet . . . and plate as thick as a Texas steak. Not to mention complete assortments of rounds, flats, hexes and squares. And expanded metal, wire rope and link chain . . . bushings, bearings and metal balls . . .

Sand and centrifugal castings, too. And valves, fittings and every standard type of fastening. Even buckets, scoops, funnels and shovels!

No doubt we've overlooked a few items. But the thought we'd like to leave with you is this: When you need corrosion-resisting metals — in any size, shape or form — call your local *Inco Distributor salesman*. He's a good man at sizing up problems and finding answers.

THE INTERNATIONAL NICKEL COMPANY, INC.

67 Wall Street

New York 5, N. Y.

Inco Nickel Alloys



MONEL® • "R"® MONEL • "K"® MONEL • "KR"® MONEL • "S"® MONEL
INCONEL® • INCONEL "X"® • INCONEL "W"® • INCOLOY®
NIMONIC® Alloys • NICKEL • LOW CARBON NICKEL • DURANICKEL®

The Name You've Always Looked For

... in self-aligning
bearings for the toughest
applications



...And the Name You've Always Known

... in the field of
mechanical power
transmission



When Next You Look for ...

Pillow Blocks

Cartridge Units

Take-Up Units

Flange Units

Duplex Units

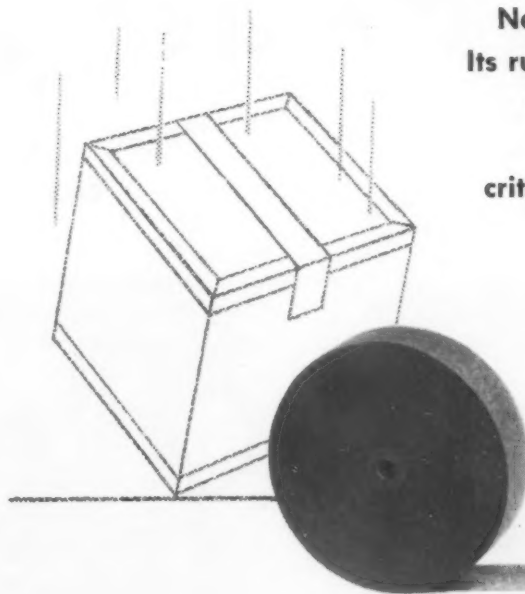
Get Shafer Self-Aligning Bearings

For more than 35 years, Shafer Self-aligning Bearings have answered the needs of all industry for dependable service. ConCaVex design gives true self alignment, exclusive self-centering "Z" Seal and Micro-Lok adjustment combine to produce the capacity and stamina

for doing the most rugged jobs. Available in a wide range of sizes and housing options. Send today for Bearing Catalog 51 containing full information. SHAFER Bearing Division, 801 Burlington Ave., Downers Grove, Illinois.

SHAFER BEARING DIVISION OF
CHAIN BELT COMPANY

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SUPER STANDARD
FLASH-TITE
NEW, IMPROVED FORMULA GUMMED TAPE

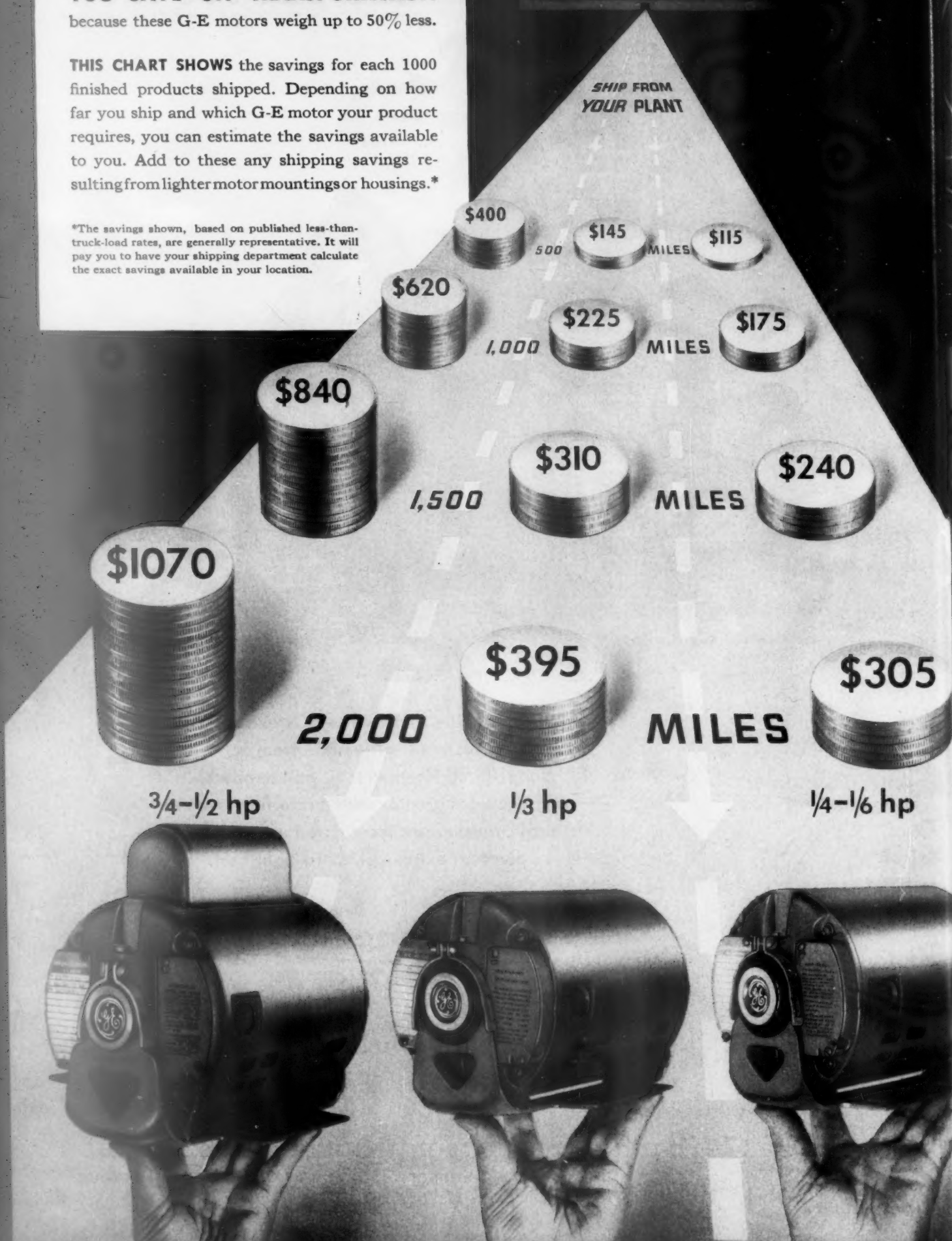
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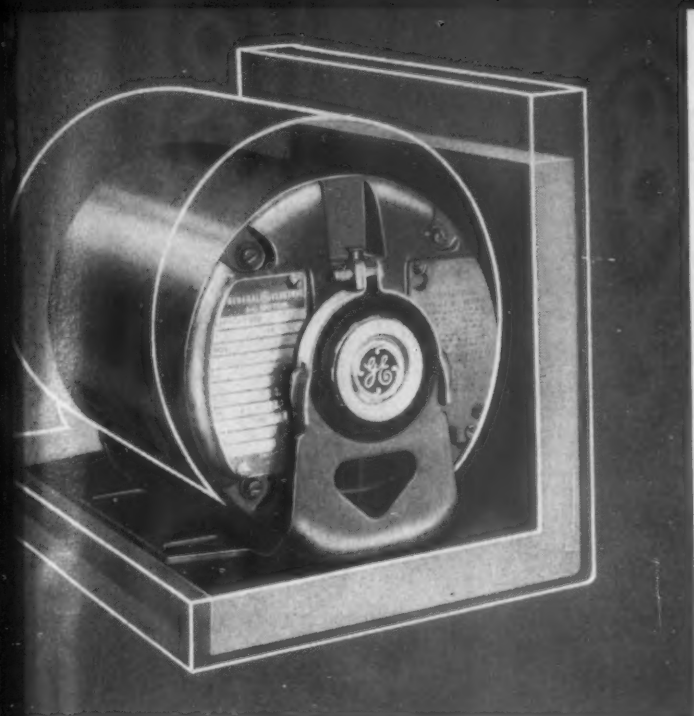
YOU SAVE ON TRANSPORTATION

because these G-E motors weigh up to 50% less.

THIS CHART SHOWS the savings for each 1000 finished products shipped. Depending on how far you ship and which G-E motor your product requires, you can estimate the savings available to you. Add to these any shipping savings resulting from lighter motor mountings or housings.*

*The savings shown, based on published less-than-truck-load rates, are generally representative. It will pay you to have your shipping department calculate the exact savings available in your location.





YOU SAVE ON MATERIAL COSTS because new G-E motors—as much as 50 percent lighter, 40 percent smaller—permit you to design smaller and lighter motor mountings and housings.

YOU SAVE ON ASSEMBLY COSTS because your assembly-line personnel will produce more efficiently with less fatigue since these General Electric motors are far easier to handle.

New smaller, lighter G-E motors give you 3 important cost savings

Significant savings are yours when you specify new lighter, smaller General Electric fractional-horsepower motors to power your products:

- 1. YOU SAVE ON TRANSPORTATION**—New G-E motors, as much as 50% lighter, reduce your finished-product shipping costs.
- 2. YOU SAVE ON MATERIALS**—Reduced motor weight permits use of lighter mountings. Smaller size (by 40%) means smaller housings are adequate.
- 3. YOU SAVE ON ASSEMBLY**—Your assembly-line people will find the all-new G-E designs take the strain

out of motor handling, speed installation.

You'll find these new G-E motors solve design problems, too: improved insulation and a new ventilation system permit application where adverse conditions exist... add to motor life in any location. A better lubrication system and thrust-bearing design mean that these new motors will operate at any angle.

To start saving with these amazing new motors, contact your nearby G-E Apparatus Sales Office today. Or write for Bulletin GEA-5567 to General Electric Co., Section 702-10, Schenectady 5, New York.

GENERAL  **ELECTRIC**

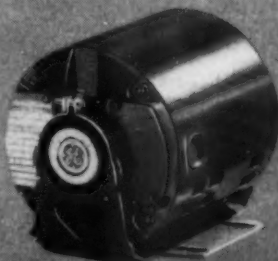
BURNER MOTORS



JET PUMP MOTORS



FAN MOTORS



LAWN MOWER MOTORS

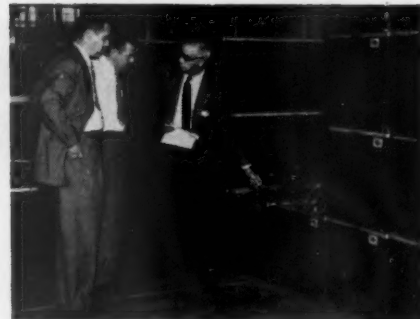




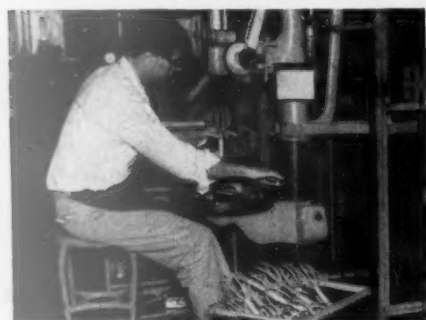
C-D-F worked with McGill. Here C-D-F sales engineer H. C. Herdman, receptacles Catalog in hand, talks with Mr. Forrest Wallace McGill foreman, about the order which swung McGill 100% into C-D-F fibre materials handling equipment.



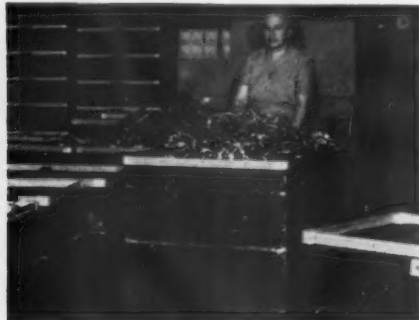
Transition was easy. Out went all barrels, cans, boxes. In came lightweight, long-life, splinter-free C-D-F fibre stacking boxes. I. to r. C-D-F district sales mgr. Robert Tappan; Mr. Howard Powell, McGill Electrical Div. Supt., Mr. Gunnard Nielsen, plant engineer.



Mr. Powell, Mr. Nielsen and C-D-F's Bob Tappan check advantages of using fibre boxes for McGill's storing of small components and assemblies. C-D-F handles complete job from design, fabrication, lettering, also makes fibre baker's boxes, textile roving cans.



Employees like fibre boxes. Fibre is half the weight of aluminum! Strong. Tough. Easy-to-clean. Machine operator R. I. Jarvis gets no backache with lightweight C-D-F boxes.



These sturdy C-D-F fibre trucks last and last and last. Miss Charlotte Wolff will find them less work, clean and attractive, a big improvement in plant appearance and efficiency.



It's easier pushing now for McGill's Tom Babcock. C-D-F construction features strong, rounded metal corners, carefully riveted. Quality comes first in these C-D-F products!

C-D-F FIBRE BOXES AND TRUCKS

saved floor area . . . improved housekeeping for McGill Mfg. Co., Inc.

The C-D-F photo-reporter asked Mr. Howard Powell, Superintendent of the McGill Mfg. Co.'s Electrical Division, the advantages of completely equipping their Valparaiso, Ind., plant with C-D-F Diamond vulcanized Fibre trucks, tote and stacking boxes. He said:

"We had no uniform containers for materials handling or storage. We used wooden boxes, paper barrels, whatever was available. This looked untidy, took too much floor area. By standardizing on several sizes of C-D-F stock boxes, we were able to save floor area, keep our aisles cleaner, and greatly improve our over-all housekeeping.

"Finished goods are now transported to the packing departments in C-D-F fibre box trucks, replacing wooden trucks. Our maintenance cost of keeping wooden boxes has been eliminated. Also, there are no more splinters!

"In our inter-department handling of electrical guard cages, metal and fibre stampings, we found that by

using stock lightweight fibre boxes, several boxes could be moved in one trip by one floor man. This cut down our handling costs."

Write for the big C-D-F Receptacles Catalog. Best of all, call your C-D-F Sales Engineer who works with you, as he did with McGill, to save floor area, keep aisles clear, move and store parts efficiently.





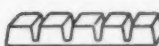
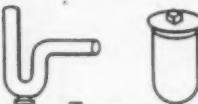
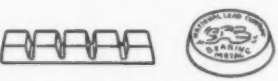

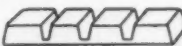






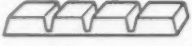





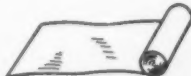

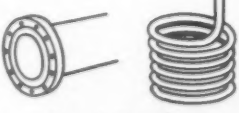


Continental-Diamond Fibre

CONTINENTAL-DIAMOND FIBRE COMPANY
NEWARK 41, DELAWARE

For More Information Circle No. 137 on Inquiry Card—Page 17

Whatever you want in lead and lead alloys



| | | | |
|---|---|---|--|
|  Antimonial Lead |  Gaskets |  Mould Metal |  Traps |
|  Bearing Metal |  Hammers |  Needle Metal |  Unions |
|  Cames |  Inserts, Battery |  Ornaments, Lead |  Valves |
|  Die Castings |  Jewelers' Metal |  Pipe |  Wool, Caulking |
|  Expansion Anchors (Cinch) |  Key Leads, Piano |  Roof Flanges |  X-ray Shielding |
|  Ferrules |  Lined Products |  Sinkers |  Y. Tee, Etc. Fittings |

...get it from
**National Lead
Company**

These are but a few of the lead or lead alloy items regularly supplied by National Lead. Whenever you need a lead product—for corrosion resistance, for caulking or sealing, for friction reduction, for sound deadening, for spark-proofing, for moulding, for masonry anchorage, for weight, or for any other duty lead does best, look to the leader in lead.

NATIONAL LEAD COMPANY

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Seattle; Canada: Canada Metal Co., Ltd., Toronto, Montreal,
Vancouver, Winnipeg.



For More Information Circle No. 138 on Inquiry Card—Page 17



Mr. Vincent Sillitta, Traffic Manager of Clarostat Mfg. Co., Inc., discloses

"How this guided missile gets there on time!"

"... 5, 4, 3, 2, 1, *fire* ... and a Clarostat product helps head the missile for an 'enemy' bomber!

"But before its deadly rendezvous, that tiny part of the missile's 'brain,' a Clarostat resistor, had to keep another vital appointment—with the Guided Missile production schedule.

"That date was kept by Air Express!

"We ship up to 15,000 pounds of Clarostat Resistors per month by Air Express. Their sizes range from the one men-

tioned above—finer than a human hair—to shipments weighing one hundred pounds and more.

"With Air Express help, we can meet extremely exacting delivery specifications. Yet most shipments cost *less* than by any other air service. A 25 lb. shipment from Boston to Toledo, for instance, costs \$6.45. That's 5¢ *less* than the next lowest air carrier—and the service can't be compared!"

It pays to express yourself clearly. Say Air Express!



Air Express



GETS THERE FIRST via U.S. Scheduled Airlines

CALL AIR EXPRESS ... division of RAILWAY EXPRESS AGENCY

For More Information Circle No. 139 on Inquiry Card—Page 17



Unretouched photo

To prove to yourself how tough Allen heat treated keys really are, slip a section of pipe over an Allen hex key that has already tightened a socket set screw to the maximum recommended. Twist the key around its axis a full 90° — IT STILL WON'T BREAK! When the Allenoy steel key finally

does shear, the break will be smooth. No splinters, no jagged edges to cause injury.

• • •

For the toughest drive key made, get Allen Hex Keys, size-marked for convenience in all sizes above 1/16".

When ordering through your local industrial distributor, specify genuine Allen Hex Keys.



**The strongest team
in fastening.**

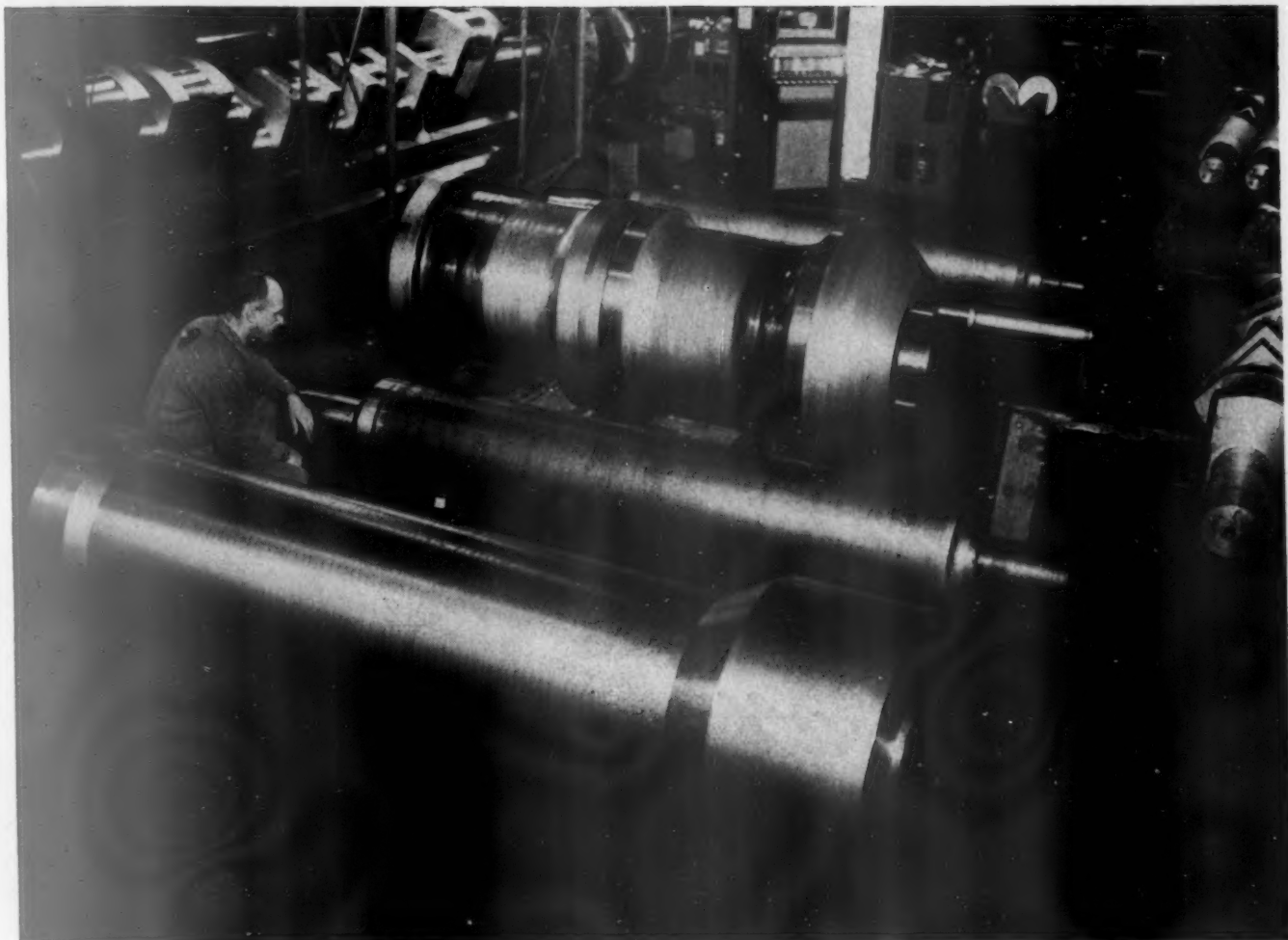
ALLEN

MANUFACTURING COMPANY
Hartford 2, Connecticut, U.S.A.



Versatility

at NATIONAL FORGE



Here is a ram, two flame-hardened rolls and a cylinder. In the left background is a crankshaft being machined.

This shows in a small part the large variety of forgings produced at National Forge. Small or large, alloy or carbon, heat-treated or annealed, rough or finished, each forged machine part is carefully produced to meet the customer's specification.

Besides a regular line of forgings, National Forge has additional facilities for contract machining and can produce single parts, sub-assemblies or complete machines.

This versatility offers you a service beyond the regular forge shop. Perhaps you have some problem in a forging or a machine component which might be solved at National Forge.

Write, wire, phone or visit us; we are always ready to be of service!



National Forge

AND ORDNANCE COMPANY

Irvine, Warren County, Pennsylvania

STEEL MAKERS ☆ FORGESMITHS

HEAT TREATERS ☆ MACHINISTS

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For More Information Circle No. 142 on Inquiry Card—Page 17—
PURCHASING

How many dimes can YOU save



from every lubrication dollar?



Simplify and Save the Pure Oil way

6-WAY SAVINGS!

1. Simplifies Lubrication
2. Speeds-Up Application
3. Minimizes Mis-application
4. Cuts Down Inventories
5. Eases Stock Control
6. Streamlines Purchasing

Be sure with Pure—Sales offices located in more than 500 cities in Pure's marketing area.

Now's the time to start tightening up on production and maintenance costs. And the place to start—one place where really dramatic savings often can be made—is on *lubrication*.

Pure Oil multi-purpose lubricants—the *specialty-formulated lubricants that do many different jobs equally well*—enable you to make a six-way savings that amount to real money. What's more, your lubrication program becomes *surer*, simpler, more efficient . . . saves time, saves machines, saves money!

For complete information on this cost-cutting program, clip out the coupon and mail it today. It's the first step toward big lubrication savings!

It Starts Here!



PURE OIL INDUSTRIAL LUBRICANTS

FREE BOOKLET

The Pure Oil Company, Industrial Sales Dept. P-410
35 E. Wacker Drive, Chicago 1, Illinois
Please send me your free booklet on how to "Simplify and Save."

NAME _____
POSITION _____
COMPANY _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____

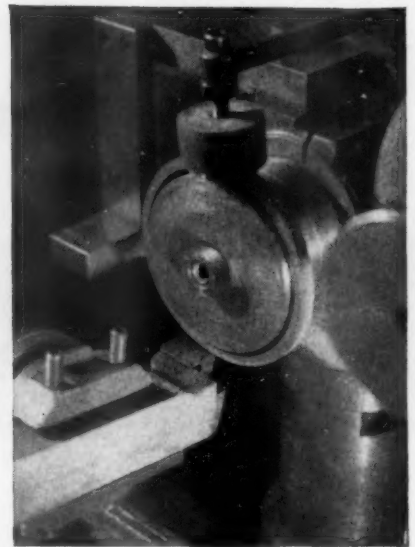
On any carbide grinding job...

Nothing



Norton Vitrified Bonded Diamond Wheels

outperform all others of this type. They combine the fast cutting action of resinoid bonded wheels with resistance to grooving approaching that of metal bonded wheels. Great durability is another advantage, since the vitrified bond adheres to the diamond particles and holds each one tightly for maximum useful life.

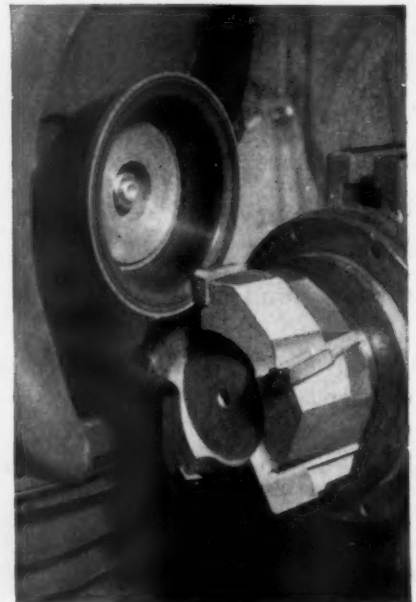


Production Grinding of Single Point Carbide Tools is most economical and efficient with Norton vitrified bonded diamond wheels. Grinding chip breakers, as illustrated, is another important job for which they are ideal. One outstanding advantage is that they hold their corners exceptionally well.



Norton Resinoid Bonded Diamond Wheels

provide the fast cutting and long, money-saving wheel life that make them favorites for precision sharpening jobs. Made in two bond types — regular, for wet grinding and B6, for dry grinding. It is always more economical to use each bond type on the applications for which it is best suited, rather than to try to make one type serve for both wet and dry grinding.



On Your Multi-Tooth Grinding Jobs, Norton resinoid bonded wheels hold size so that each tooth gets the uniform grinding vital to good cutter performance. And in the straight, thin shapes permitted by the resinoid bond they make excellent cut-off wheels for salvaging damaged carbide tools.

Norton wheel cuts like a diamond₁

Diamond wheels in carbide grinding more than pay for themselves. "It's just like finding money."

You can cut grinding time — and grinding costs — to the lowest possible by standardizing on Norton diamond wheels.

As a result of Norton Company's long pioneering† in diamond wheel development, Norton diamond wheels bring you a combination of long service life and efficient cutting action that means maximum economy — across the entire range of carbide grinding applications.

Besides the vitrified and resinoid bonded types shown here, Norton diamond wheels are also available in a metal bond — where durability and resistance to grooving, rather than a fast rate of cut, are primary considerations. For every application the proper size and type of Norton diamond wheels are available in a wide variety

of grit sizes. (For small-volume requirements, Norton K Bond CRYSTOLON* wheels are often the best investment. See illustrations.)

See Your Norton Distributor

for aid in selecting the right Norton wheels for every grinding job. And ask him for the 142-page, illustrated booklet: "Grinding Carbide Tools." Or write to NORTON COMPANY, Worcester 6, Mass. Distributors in all principal cities. Listed under "Grinding Wheels" in your classified phone directory. Export: Norton Behr-Manning Overseas Incorporated, Worcester 6, Mass.

Making better products... to make other products better



Norton K Bond CRYSTOLON* Wheels

feature fast, cool cutting and exceptionally uniform performance. The vitrified K Bond permits half-grade increments of hardness, enabling you to "pin-point" your specifications. Use these wheels for roughing and backing off. Usually preferred in green CRYSTOLON, but also available in gray.



For Small-Volume Carbide Grinding, especially in single-point applications, the K Bond wheels offer outstanding economy. Their high stock removal rate and uniform performance assure quality grinding at lowest cost.

*Trade-Mark Reg. U. S. Pat. Off. and Foreign Countries -
†First with resinoid bonded, first with metal bonded, first with vitrified bonded diamond wheels.

W-1579



and its BEHR-MANNING division

NORTON: Abrasives • Grinding Wheels • Grinding Machines • Refractories
BEHR-MANNING: Coated Abrasives • Sharpening Stones • Pressure Sensitive Tapes

For More Information Circle No. 143 on Inquiry Card—Page 17

MORE THAN 100 YEARS OF FILE MAKING
AND STILL PIONEERING



HELLER WAS FIRST WITH SPIRAL-CUT HALF ROUND FILES

Ordinary half round files require a skillful twisting of the file to produce smooth, even work. Heller engineering has removed this human element from good file performance with exclusive Spiral-Cut Half Round Files. The necessary "rolling action" is designed right into the file. This new cutting principle is typical of Heller's continuous search for better files. By constantly testing, inspecting, improving . . . Heller guarantees file users "the best."

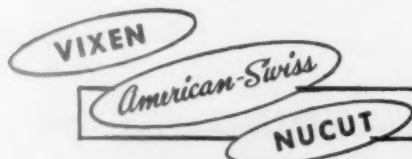
other Heller *Firsts*

NUCUT® Wavy-Teeth Files

VIXEN Milled Curved Tooth Files

WAVY-TEETH® Double Cut Mill and Saw Files

*Registered T.M.



THESE 3 FAMOUS BRANDS ARE MADE ONLY BY

HELLER BROTHERS CO. America's Oldest File Manufacturer NEWCOMERTOWN, OHIO



YOUR HELLER DISTRIBUTOR CAN SUPPLY ALL YOUR FILE NEEDS

For More Information Circle No. 144 on Inquiry Card—Page 17
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For More Information Circle No. 145 on Inquiry Card—Page 17 →
PURCHASING

Protection Advantages **CONTINENTAL** Fence Provides



Konik steel contains copper, nickel and chromium for greater strength and rust resistance.

- Reduced Expense in Guarding Property
- Controlled Entrance and Exit to Property
- Security in Labor Difficulties
- Fewer Accidents—Reduced Liability
- Increased Outdoor Storage Space
- Reduced Fire Risk, Lower Insurance Rates
- Better Appearance, Higher Property Value
- Lasting Protection against Theft, Vandalism



CONTINENTAL

STEEL CORPORATION • KOKOMO, INDIANA

Producers of

Manufacturers Wire in many sizes, shapes, tempers and finishes, including Galvanized, KOKOTE, Flame-Sealed, Coppered, Tinned, Annealed, Lacquer Finished, Bright, and Special Wire. Also, Coated and uncoated Steel Sheets, Nails, Continental Chain Link Fence, and other products.



Continental Steel Corp.
Kokomo, Indiana

Please send free copy of your "Planned Protection" manual without obligation.

Name _____

Address _____

City _____ State _____

APEX screwdriver bits proved better!

APEX Insert Bits for driving Phillips screws



STANDARD LENGTH



LONG LENGTH



HEAVY DUTY for use with impact tools.

Again—Apex screwdriver bits have been *proved* better, outperforming competitive bits by a margin considerably better than two to one. This impartial test was conducted over a two-month period by one of the nation's largest producers of automobiles. The Apex bits used in the test were standard production bits, taken from tool crib stock. Detailed records of performance proved Apex bits outlasted others on the basis of hours used.

Apex—specialists in screwdriving—has the solution to *your* production screwdriving problems. Choose from magnetic or standard hand

SCREWDRIVER BIT COMPARISON TEST

Project: To determine which Phillips screwdriver bit delivered the most efficient performance, at lowest tool cost.

Duration of Test: Two months.

Type of Test: Routine production screwdriving operations.

Results of Test: APEX screwdriver bits outperformed other bits by better than two to one.

Conclusion: Continued use of APEX bits recommended for all production screwdriving operations.

drivers, and bit holders to fit air, electric or spiral drivers, for use with Apex insert bits to drive Phillips, Frearson (Reed & Prince), Slotted, Clutch Head or Socket Head screws. Power bits, hand drivers, service drive bits, hand brace bits, offset drivers—whatever your needs, you'll find Apex has the answer.

Catalog 21—The authority on screwdriving

Comprehensive listings of all Apex production screwdriving tools, with complete specifications and prices. Fully illustrated and sectionalized for quick, easy reference. Write, on your company letterhead please, for your copy.

APEX TOOLS

screwdriving tools

THE APEX MACHINE & TOOL COMPANY
1034 S. Patterson Blvd., Dayton 2, Ohio

POWER BITS, INSERT BITS AND BIT HOLDERS, FOR PHILLIPS, FREARSON (Reed & Prince), SLOTTED, CLUTCH HEAD and SOCKET HEAD SCREWS • HAND DRIVERS FOR PHILLIPS, FREARSON AND CLUTCH HEAD SCREWS • TWO-PIECE DRIVERS FOR HEX HEAD SCREWS • SOCKETS, EXTENSIONS, ADAPTERS AND NUT SETTERS • UNIVERSAL SOCKETS, EXTENSION WRENCHES AND ADAPTERS • AIRCRAFT AND INDUSTRIAL UNIVERSAL JOINTS • SELF-RELEASING AND ADJUSTABLE STUD SETTERS • SAFETY FRICTION TAPPING CHUCKS • VERTICAL FLOAT TAPPING CHUCKS.

For More Information Circle No. 146 on Inquiry Card—Page 17



**Another casualty
that couldn't have
happened with**

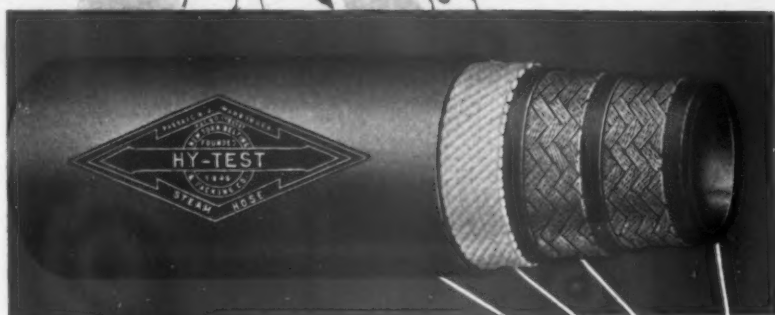
Hy-Test Steam Hose

HY-TEST® Steam Hose protects workers *two* ways. First, it just *can't* suddenly burst and release scalding, super-heated steam! Second, it's never too hot to handle! Look at its unique construction and you'll see why.

Tightly encasing its special heat-resistant inner tube are multiple plies of *closely braided steel wire*, separated by thin rubber plies. Even at working pressures up to 200 pounds, actual rupture is impossible. When, after long service, the tube starts to fail, only harmless wisps of steam are able merely to *seep* through the hose's steel armor sheaths, giving ample warning that replacement is needed!

Notice, also, the breaker ply of heavy asbestos cord under the tough, abrasion-resistant cover. This layer of insulation provides a cooler outside surface that makes HY-TEST Steam Hose easier to handle.

For your workers' safety and morale—and long-range economy, too—specify HY-TEST for high pressures! Your nearby NYB&P Distributor has it. If he's not listed in your local classified directory, write to address below.



Special tube assures extra long life.
Braided steel wire plies provide tremendous strength and safety.
Asbestos breaker ply serves as insulator.
Tough cover withstands external abrasion.

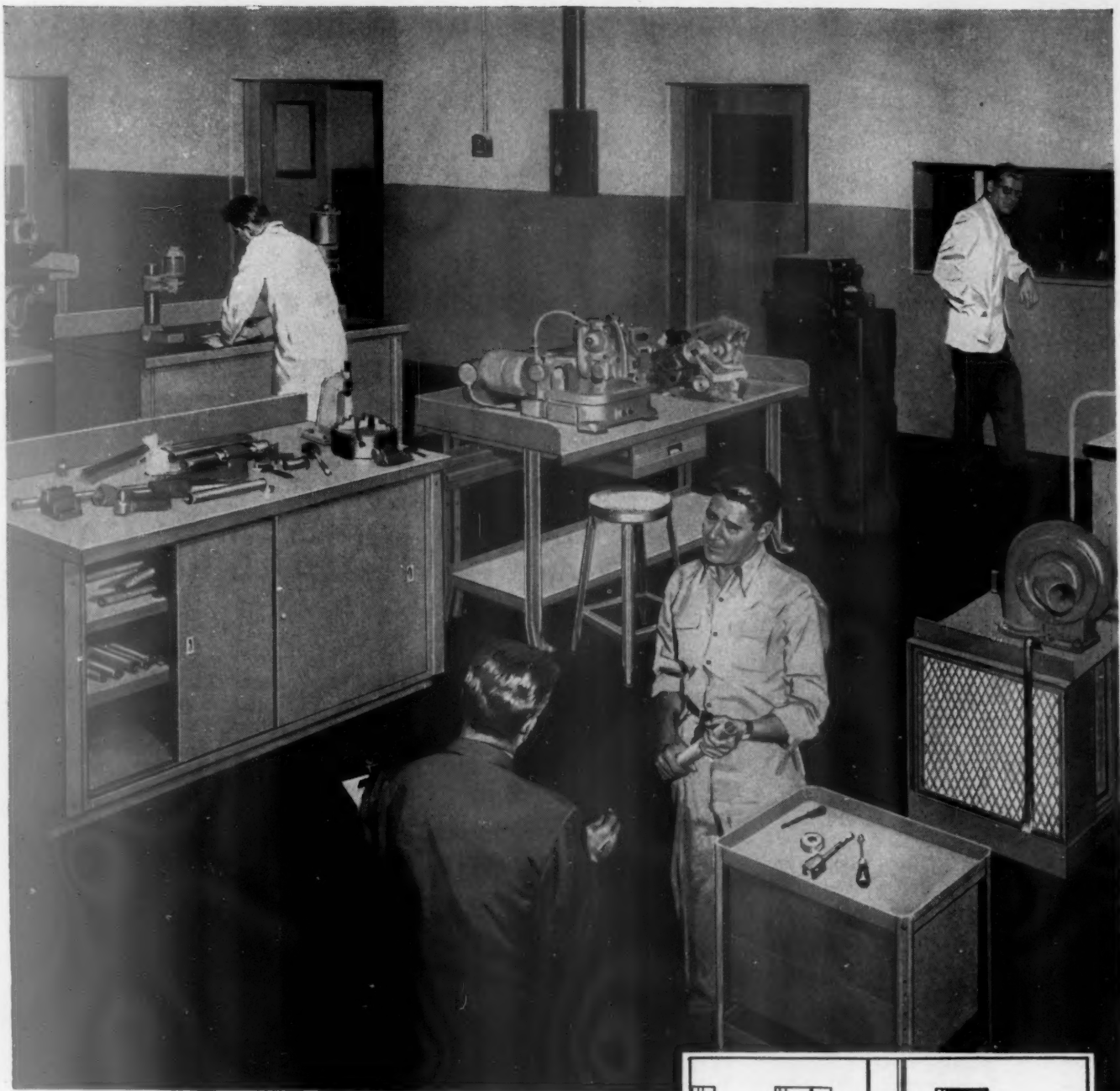


NYB&P

NEW YORK BELTING & PACKING CO. 1 Market St., Passaic, N. J.

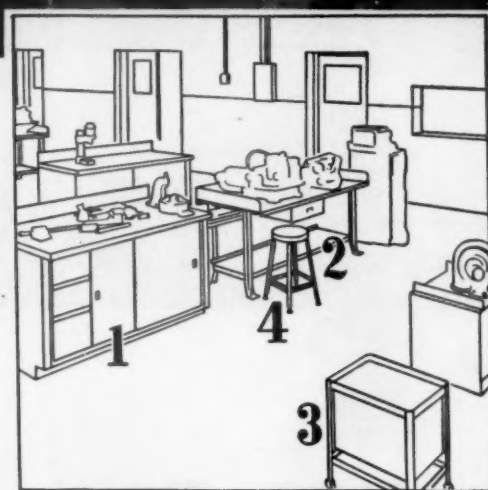
America's Oldest Manufacturer of Industrial Rubber Products

For More Information Circle No. 147 on Inquiry Card—Page 17



MODERNIZING YOUR LAB?
Fit it up FAST and at LOW COST
with standard HALLOWELL Shop Equipment

Your HALLOWELL distributor will be glad to give you the latest product information and help you select the best combination to fit your requirements. And because he carries a complete stock of this standard, interchangeable equipment, he can save you time and money. For more information, consult him or write STANDARD PRESSED STEEL Co., Jenkintown 31, Pa.



- | | |
|--------------------|----------------------|
| 1. Cabinet Benches | 3. Tool Stands |
| 2. Work Benches | 4. Stools and Chairs |

HALLOWELL SHOP EQUIPMENT DIVISION

SPS
 JENKINTOWN PENNSYLVANIA

For More Information Circle No. 148 on Inquiry Card—Page 17



"You see Powell Valves everywhere! And with . . .

*. . . good reason! They're famous for dependability. Economical, too.
What's more, Powell has a complete line."*

Just name the valve needed...

. . . POWELL CAN SUPPLY IT! Small wonder—since Powell probably makes more kinds of valves and has solved more valve problems than any other organization in the world.

Available through distributors in principal cities. In bronze, iron, steel and corrosion resistant alloys. $\frac{1}{8}$ " to 30" and 125 pounds to 2500 pounds W.S.P. On problems, write direct to The Wm. Powell Company, Cincinnati 22, Ohio.



CONTROLS FOR THE LIFE LINES OF INDUSTRY

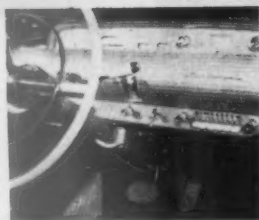
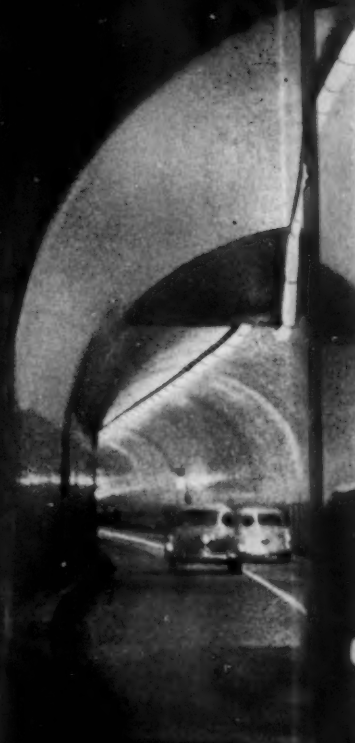
Powell Valves

*108th
year*

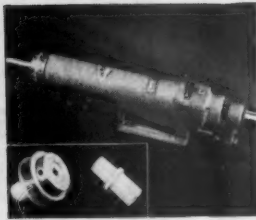
Fixtures of DU PONT ...resist cracking,



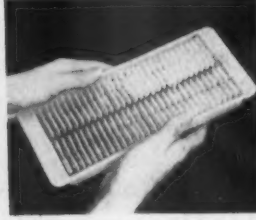
A RIBBON OF LIGHT—extruded fixtures of clear, shatter-proof Du Pont "Lucite" used in the beautiful Broadway Tunnel in San Francisco. These fixtures were manufactured by Sunbeam Lighting Co., Los Angeles, Cal.



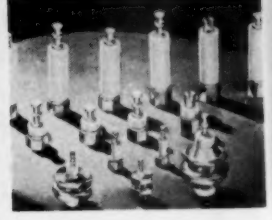
LUCITE® acrylic resin is used to make products that are both functional and decorative. The most beautiful of all engineering materials—it is produced clear and in color. Products of "Lucite" are shatter-resistant, have good dimensional stability and possess excellent resistance to weathering. Shown here is a modern instrument panel.



ZYTEL® nylon resin is a versatile Du Pont engineering material for mechanical applications. Parts made of it are lightweight but unusually strong, resilient. Often they require no lubrication. Parts of "Zytel" can be economically mass-produced by injection molding or extrusion. Pictured is a splined bushing of "Zytel" used in air-controlled drills.

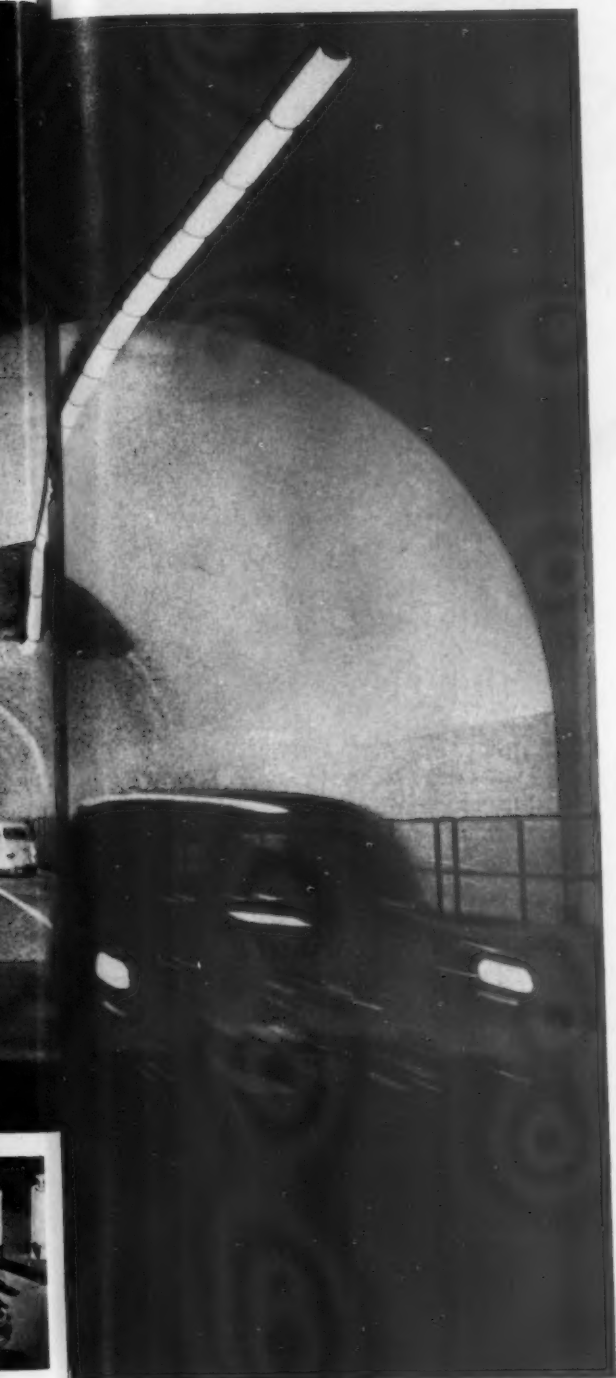


ALATHON® polyethylene resin is readily processed by molders and extruders. It has good chemical resistance and excellent dielectric properties. It's tough and flexible over a wide range of temperatures. Freedom from odor, taste, and toxicity makes it an ideal packaging material. Here is a new ice-chipper tray, which makes use of many of these properties.



TEFLON® tetrafluoroethylene resin is especially suited for use under severe service conditions. Almost no chemicals attack it. It can be used where service temperatures reach 500°F. Its dielectric properties are outstanding. "Teflon" is formed by special molding processes or extrusion. Standoff and feed-through insulators are shown.

LUCITE® eliminate glare weathering, fumes



"Lucite" diffuses light...withstands impact of detergent cleaning spray

The lighting system in this new twin-bore tunnel that cuts through Russian Hill in San Francisco has won many prizes. It gives motorists maximum visibility without glare . . . safe, gradual changes in light candle power.

For the lighting fixtures running the full length of the tunnel's ceiling, the engineers specified shatter- and weather-resistant Du Pont "Lucite" acrylic resin. These extruded fixtures are ribbed on the inside so light is diffused and no harsh glare is reflected from the contoured tiling. Their smooth outer surface makes them easy to clean—and tough "Lucite" won't crack or shatter from the 100 p.s.i. detergent water spray used in the cleaning operation. "Lucite" resists weathering and is not affected by dust, exhaust fumes and the cleaning detergents.

In other applications, "Lucite" offers unique "light-piping" and "edge-lighting" properties. It can be produced in a variety of clear, translucent and opaque colors. And the various molding techniques— injection, compression and extrusion — help make production fast, efficient and economical.

Have you investigated the properties of "Lucite" acrylic resin and other members of the Du Pont family of engineering materials—"Zytel" nylon resin, "Alathon" polyethylene resin, and "Teflon" tetrafluoroethylene resin? The applications shown here are typical product improvements—possible when design and service requirements are evaluated in terms of the properties of these unique engineering materials. For further information on the properties and uses of these materials, use the coupon below or write to E. I. du Pont de Nemours & Co. (Inc.), Polychemicals Department, Room 3710, Du Pont Bldg., Wilmington 98, Delaware.



REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING
... THROUGH CHEMISTRY

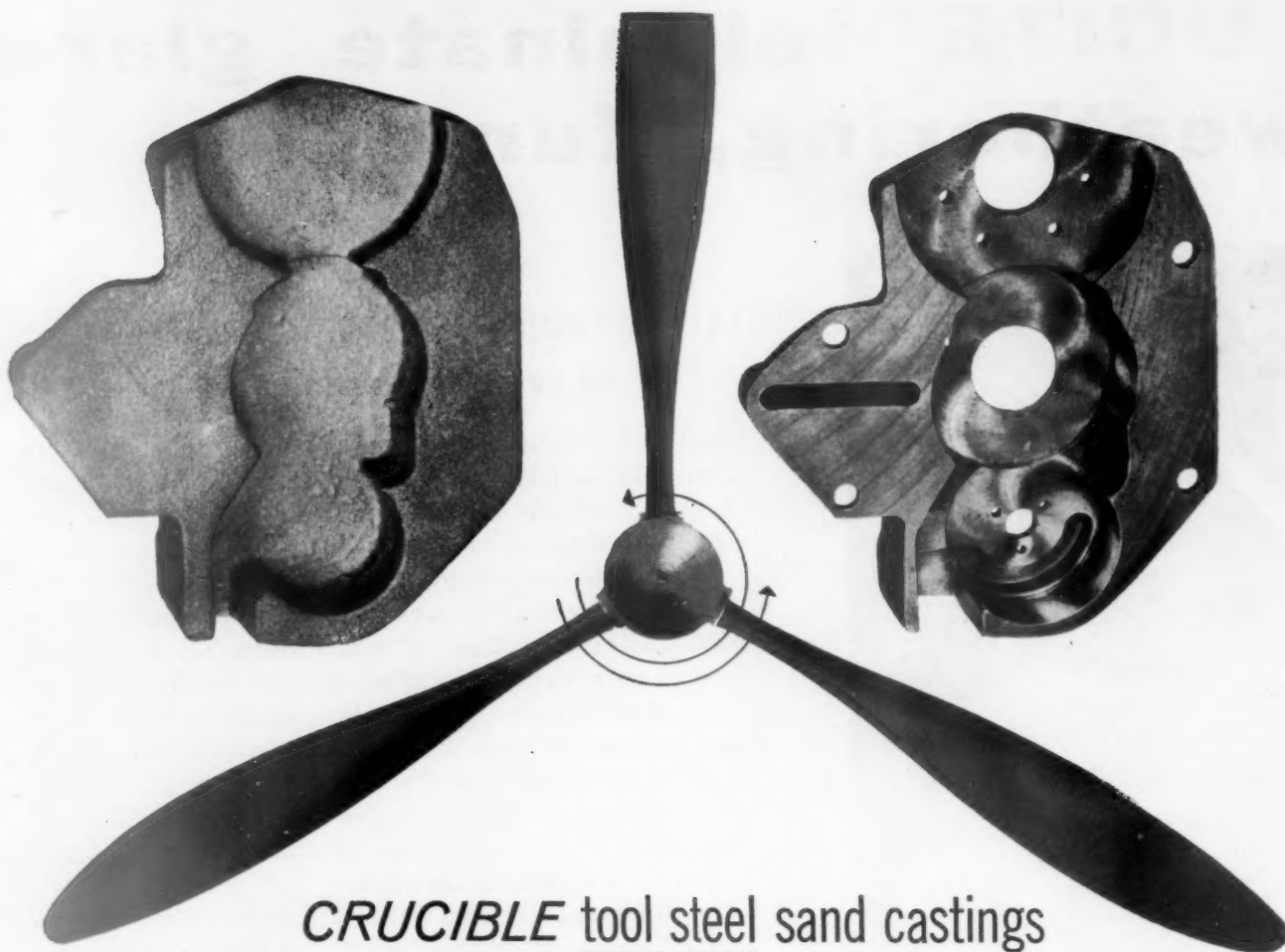
*"Zytel" is the new trade-mark for Du Pont nylon resin.

E. I. du Pont de Nemours & Co. (Inc.), Polychemicals Department
Room 3710, Du Pont Building, Wilmington 98, Delaware

Please send me more information on the Du Pont engineering materials checked:
"Lucite" acrylic resin ☐;
"Zytel" nylon resin ☐;
"Alathon" polyethylene resin ☐; "Teflon" tetrafluoroethylene resin ☐. I am interested in evaluating these materials for _____

Name _____
Title _____
Firm Name _____
Street Address _____
City _____
State _____
Type of Business _____

For More Information Circle No. 150 on Inquiry Card—Page 17



CRUCIBLE tool steel sand castings end frequent replacement of aircraft propeller pump parts...

This AIRKOOL tool steel sand casting, a sump pump housing for an aircraft feathering propeller, adds valuable flying time between overhauls.

Originally made of magnesium, the housing wore down and had to be replaced frequently. Crucible castings engineers tackled the problem. Their solution: AIRKOOL castings of 5% carbon, air hardening tool steel. AIRKOOL's abrasion resistance, toughness, machinability, and non-deforming qualities when hardened, make it practical to cast to close tolerances. And although the walls of this part are sometimes less than $\frac{1}{8}$ " thick, it's heat treated to 55Rc with no discernable distortion.

Refer your production problems to Crucible. For Crucible castings engineers have both the *experience* and *production facilities* for quality castings — sand, investment, shell mold, green or baked core. When you need steel castings call *Crucible*.



54 years of *Fine* steelmaking

CRUCIBLE

first name in special purpose steels

AIRKOOL SAND CASTINGS

CRUCIBLE STEEL COMPANY OF AMERICA, GENERAL SALES OFFICES, OLIVER BUILDING, PITTSBURGH, PA.
 REX HIGH SPEED • TOOL • RESISTAL STAINLESS • ALLOY • MAX-EL • SPECIAL PURPOSE STEELS

Canadian Distributor — Railway & Power Engineering Corp., Ltd.

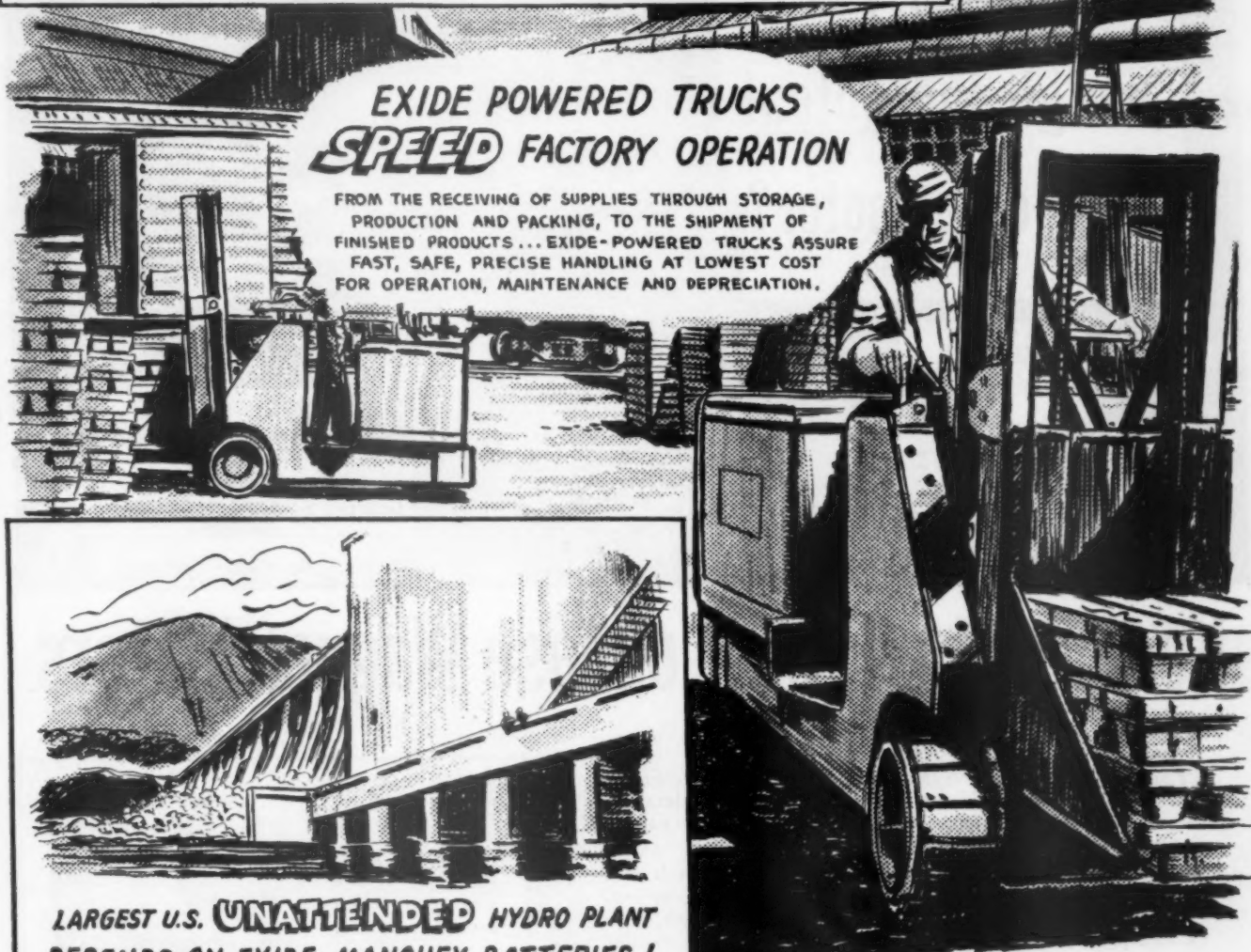
For More Information Circle No. 151 on Inquiry Card—Page 17

FACTS ABOUT **Exide**[®]

INDUSTRIAL BATTERIES

EXIDE POWERED TRUCKS **SPEED** FACTORY OPERATION

FROM THE RECEIVING OF SUPPLIES THROUGH STORAGE, PRODUCTION AND PACKING, TO THE SHIPMENT OF FINISHED PRODUCTS... EXIDE-POWERED TRUCKS ASSURE FAST, SAFE, PRECISE HANDLING AT LOWEST COST FOR OPERATION, MAINTENANCE AND DEPRECIATION.



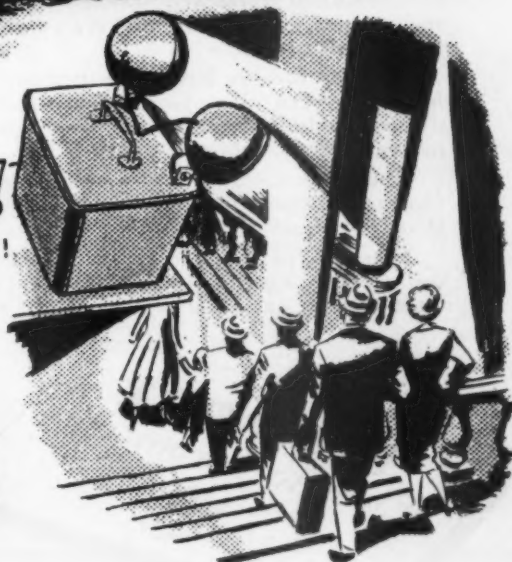
LARGEST U.S. UNATTENDED HYDRO PLANT DEPENDS ON EXIDE-MANCHEX BATTERIES!

THIS 33,700 K.W. HYDROELECTRIC PLANT IN WISCONSIN NEEDS NO OPERATORS, BUT DOES RELY ON EXIDES TO FURNISH STAND-BY POWER FOR SWITCHES AND EMERGENCY NEEDS.

NOBODY'S EVER IN THE DARK!

WHEN LIGHTS GO OUT, EXIDE LIGHTGUARD UNITS GO ON, INSTANTLY, AUTOMATICALLY! THEY PROVIDE ADEQUATE AND DEPENDABLE EMERGENCY LIGHTING PROTECTION IN RAILROAD STATIONS, FACTORIES, STORES, SCHOOLS, THEATRES, OFFICES, WHEREVER PEOPLE CONGREGATE, PROTECT YOUR PEOPLE AND PROPERTY AGAINST LIGHTING FAILURES. WRITE FOR DETAILS, DEMONSTRATION.

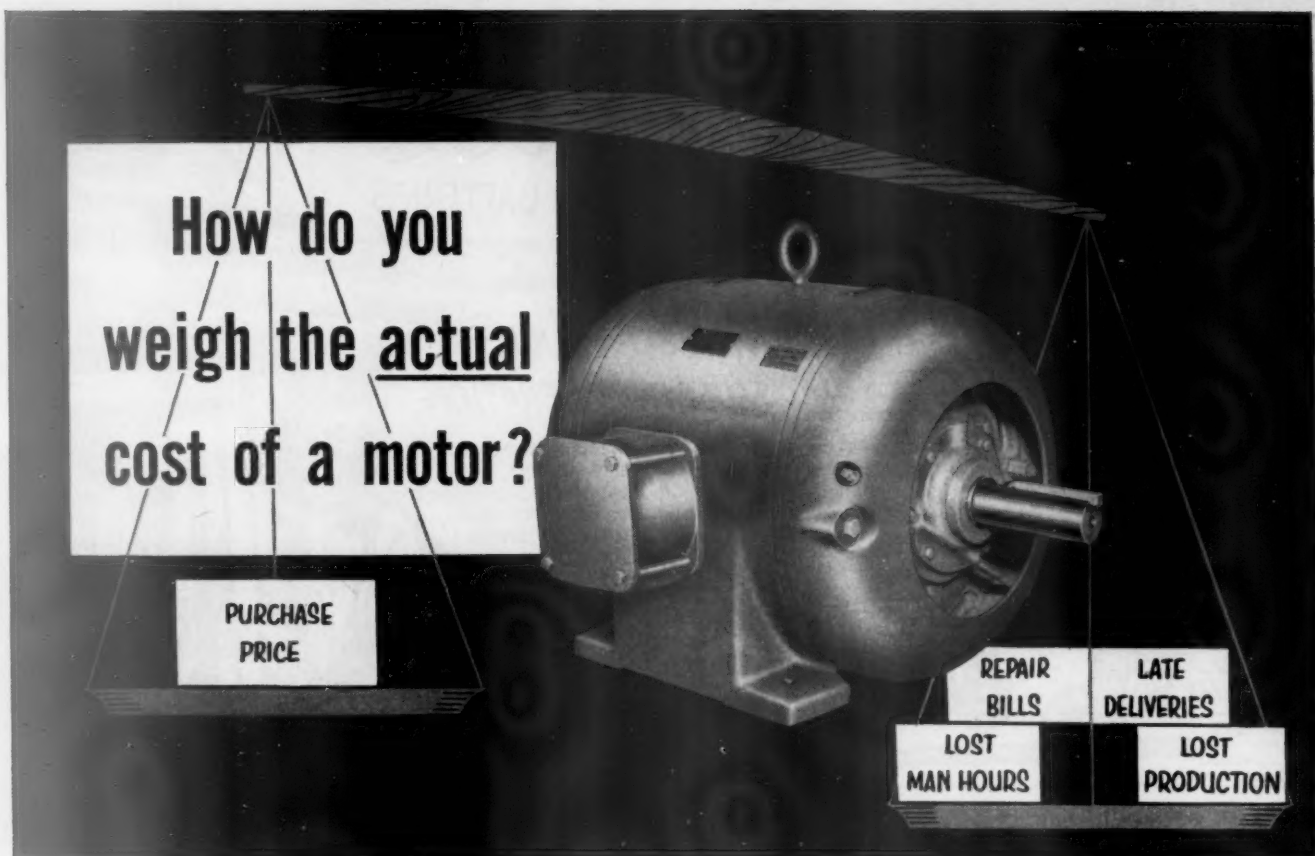
EXIDE INDUSTRIAL BATTERIES ARE BUILT FOR LONGER LIFE AND GREATER POWER. LET AN EXIDE SALES ENGINEER SHOW YOU HOW EXIDES CAN IMPROVE YOUR OPERATIONS, CUT COSTS, PROTECT YOUR BUSINESS.



Exide

INDUSTRIAL DIVISION, The Electric Storage Battery Company, Philadelphia 2, Pa.

For More Information Circle No. 152 on Inquiry Card—Page 17



Keep costs down...choose Wagner® Motors

The selection of the right motor for every specific industrial application is all important. Due consideration must be given to motor type, rating, slip, torque values, and other operating characteristics.

But, because the ultimate cost is the actual cost of a motor... alert buyers look beyond such specifications. They look for other factors, such as cool operation, with consequent longer insulation life... and they consider the *time-tested proven dependability* of the brand of motor they specify. They know that it's costly to take chances with motor drives.

Wagner Motors have been proving their reliability for more than sixty years. Many thousands of users throughout industry have found them a lasting investment in continuous troublefree performance.

The wide range of types and sizes in Wagner's complete line permits the selection of a standard motor for almost any need. Bulletin MU-185 gives full information.

Your nearby Wagner engineer will be glad to help you select the *right* motors for your next application. Call the nearest of our 32 branch offices, or write us.



M54-17

WAGNER ELECTRIC CORPORATION
6360 PLYMOUTH AVE., ST. LOUIS 14, MO., U.S.A.

BRANCHES AND DISTRIBUTORS IN ALL PRINCIPAL CITIES

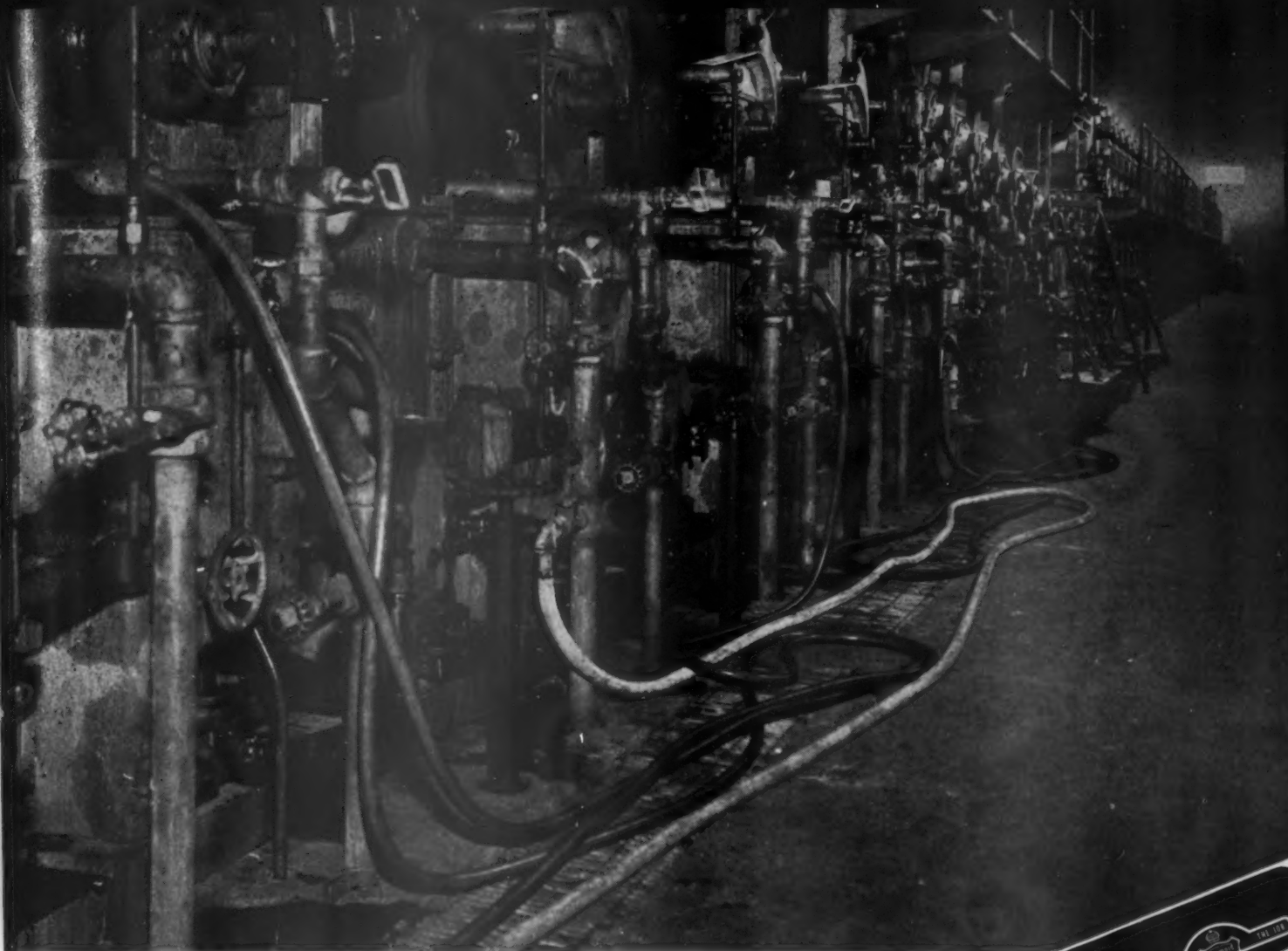
For More Information Circle No. 153 on Inquiry Card—Page 17



Open type poly-phase squirrel-cage motor for general purpose applications... 1/2 to 400 hp.

Totally enclosed, fan-cooled motor... explosion-proof or standard types... steel or cast-iron frame... 1 to 250 hp.

ELECTRIC MOTORS
TRANSFORMERS
INDUSTRIAL BRAKES
AUTOMOTIVE
BRAKE SYSTEMS—
AIR AND HYDRAULIC



Thermoid Hose Versatility Cuts Your Costs

The versatility of Thermoid multi-purpose hose makes stocks of many different types unnecessary. You cut your hose cost through reduced inventories, simplified buying and less storage space. Losses from end remnants are greatly reduced.

VERSAFLEX—Excellent for handling air, water or oil under high pressure. Use also for butane, propane and as fire fighting booster hose. Red cover.

VERSICON—Most versatile hose ever offered. Handles air, water, oils, greases, gases and dilute acids. A real inventory-saver! Brown cover.

AQUAIR—Handles air, water, gases where oil is not present. Ideal for oxygen and acetylene welding operations. Tough, yet light and flexible. Green cover.

In addition, Thermoid makes other types of hose for specific applications, such as paint spray, sand blast, dust collecting, etc. Call your Thermoid Distributor. He can help you select the hose best suited for your requirements. Or write direct for our latest catalogs.

Your Thermoid Distributor also carries a complete line of Thermoid Conveyor Belting and Multi-V Belts to meet all your requirements.

VERSAFLEX

VERSICON

AQUAIR

Thermoid

Conveyor & Elevator Belting • Transmission Belting
F.H.P. & Multiple V-Belts • Wrapped & Molded Hose

Rubber Sheet Packings • Molded Products
Industrial Brake Linings and Friction Materials

Thermoid Company • Offices & Factories: Trenton, N. J., Nephi, Utah



R-P & C VALVES

Bronze, Electric
Iron & Cast Steel
Valves and Steel Fittings
R-P & C VALVE DIVISION



TRU-LAY Preformed WIRE ROPE

ACCO Registered
Wire Rope Slings,
Crescent Non-Preformed
Wire Rope
AMERICAN CABLE DIVISION



PAGE CHAIN LINK FENCE

Welding Wire,
Shaped Wire,
Manufacturers' Wire
PAGE STEEL & WIRE DIVISION



AMERICAN CHAIN
Weed Tire Chains,
Welded and Weldless
Chain, ACCO Registered
Sling Chains
AMERICAN CHAIN DIVISION

LAY-SET Preformed WIRE ROPE

Nonparell
Non-Preformed Wire Rope
HAZARD WIRE ROPE DIVISION



MANLEY AUTOMOTIVE EQUIPMENT

Presses, Jacks,
Wrecking Cranes, etc.

MANLEY DIVISION



These and Other Acco Products Offer Better Values

• Acco products are designed and manufactured to be "intentionally better." They are used directly, or as component parts in a wide variety of products and machines. They help do many jobs better. 16 Divisions of the American Chain & Cable Company manufacture more than 100 essential products.

TRU-LAY CABLE CONTROLS

Aircraft Cable, Push-Pull
Controls, Tru-Stop Brakes
for Trucks and Buses
AUTOMOTIVE
AND AIRCRAFT DIVISION



HELICOID PRESSURE GAGES

HELICOID GAGE DIVISION

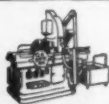
FORD HOISTS

Hand and
Electric Hoists

FORD
CHAIN BLOCK DIVISION



**PENNSYLVANIA
LAWN MOWERS**
Power and Hand Mowers
PENNSYLVANIA
LAWN MOWER DIVISION



CAMPBELL MACHINES
Wet Abrasive
Cutting Machines,
Nibbling Machines
CAMPBELL MACHINE DIVISION

"ROCKWELL" and TUKON HARDNESS TESTERS

WILSON MECHANICAL
INSTRUMENT DIVISION



WRIGHT HOISTS and CRANES

Wright Hand
Hoists, Speedway
Electric Hoists, Cranes

WRIGHT HOIST DIVISION



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For More Information Circle No. 155 on Inquiry Card—Page 17

Pressure is Easing

SALES EXECUTIVES in conference at Rutgers University last month agreed that selling is going to be easier in the period just ahead. As we read their comments, they do not mean that demand is going to burgeon overnight or that purchasing agents are getting soft. They are not giving up the idea of "hard sell", which has been the sales slogan since the earliest evidences of the buyers' market appeared; we need hard competitive selling to spark continued industrial activity and progress, and certainly there are few industrial concerns that can afford to lessen their efforts on that score now. They do mean that, to a degree, the pressure has been relaxed. To that same extent, purchasing will be easier, too.

"High pressure" in selling and in buying connotes excessive ambition and excessive zeal—often, excessive worry. When those qualities are condoned or encouraged, they frequently lead to compromises in judgment, in policy, and in ethics. High pressure salesmen and buyers often get results, but they have never been regarded as ornaments to either profession, and even their successes have a habit of boomeranging upon their companies and themselves. An unfortunate aspect of their activity is that it may force others into similar tactics to protect their competitive position.

We shall probably never be entirely free from problems and pressures. Front page headlines keep us stirred up with the realization that there are still many trouble spots at home and abroad that must be dealt with. But in the more conservative inside pages there are many indicators of soundness and stability. Businesswise, the fear of a major recession has been pretty thoroughly dispelled. Inventory adjustments have been about completed. Supply and demand are reasonably in balance, at an encouragingly high level. The majority of foreign currencies have stabilized. The domestic business atmosphere has been cleared with enactment of the Administration's economic and financial program.

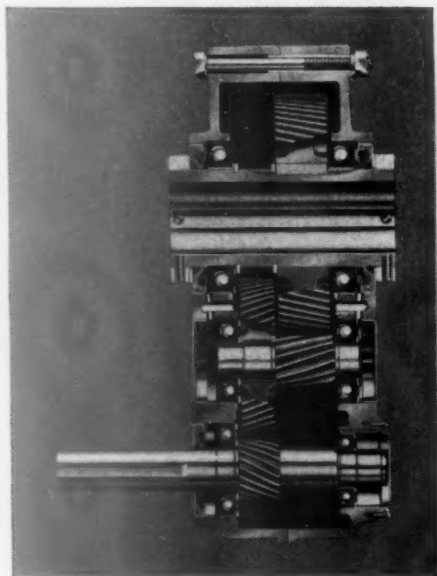
The one big imponderable has been the human element, which can be both cause and effect in relation to the other factors. That is what gives significance to the opinions voiced at the Rutgers conference and at other meetings of businessmen throughout the nation.

In business and in diplomacy, as in sport, the "old pro" is the one who doesn't panic or press, but who can take pressure in stride—whose mind and body are relaxed, seeing clearly and functioning at top efficiency—who can maintain disciplined "form" whether the tides of fortune and of competition happen to be running for or against him at the moment.

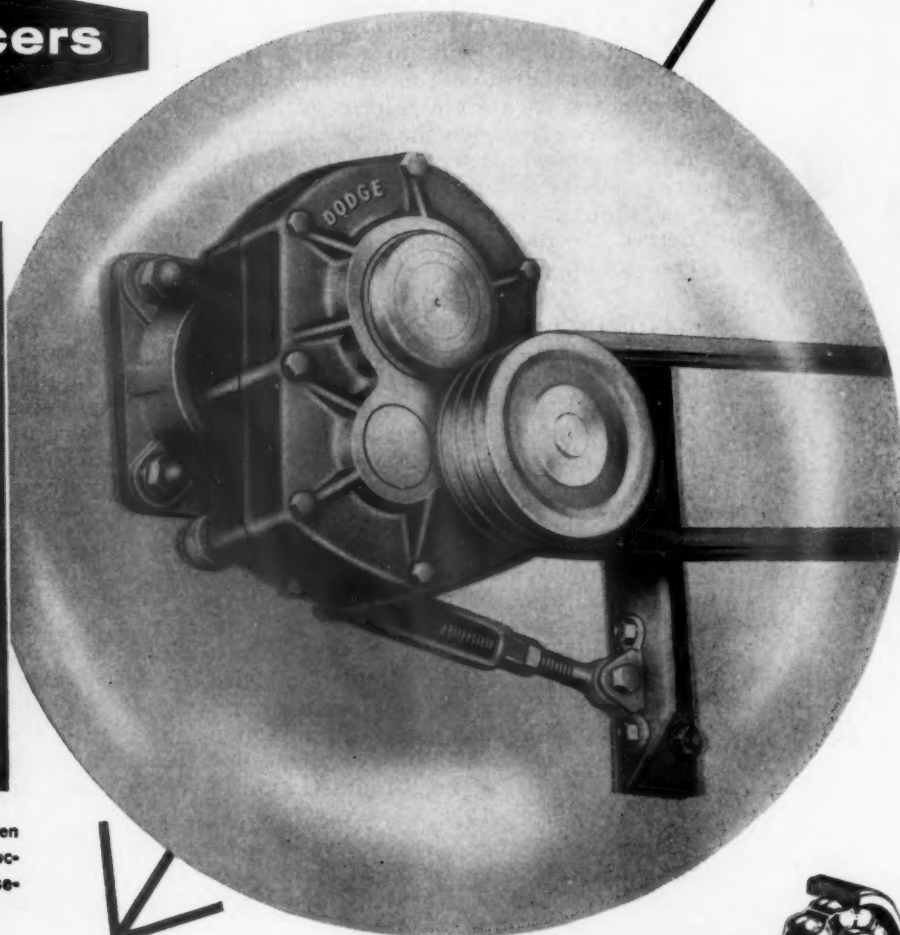
There is increasing evidence that the "old pros" have taken charge of the business team again.

Stuart F. Hemenway

Reducing Costs in Speed Reducers



New Departure ball bearings are used in seven basic sizes of the Dodge single and double reduction speed reducers, handling from 1 to 43 horsepower at output speeds from 12 to 330 r.p.m.



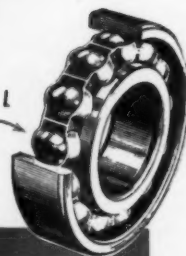
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Highlights

This issue's important features summarized for the busy reader



Imports of industrial products and materials are rising—evidence that more and more American purchasing agents are turning to **Foreign Sources** of supply to provide their requirements in the present highly competitive era. The economic implications of this trend are discussed in the article on page 81, together with some practical information concerning the techniques and paperwork involved in this type of buying. You may be faced with this problem in the near future.

The new **Tax Law** is going to have a decided impact on purchasing policies, particularly in the field of capital equipment, where depreciation allowances are a vital factor of ultimate cost. On page 75, a tax expert gives you the facts and figures on the new schedules, which may make it economical for you to revise plant modernization plans on a continuing short term basis to take advantage of tax savings, and may have the unexpected result of revolutionizing machine tool purchasing and distribution.

It's getting close to annual **Inventory Time**. You can profit by reading the experience of one concern that found a way to do the job in hours instead of weeks. The story appears on page 117.

The nation's biggest stores operation is the 4-million-item inventory of the military services. A serious effort at **Surplus Disposal** is now being made to clear this inventory of unnecessary property, and buying opportunities may develop in many categories. On page 83, our Washington editor interviews the top man in "Operation Clean-Sweep" and asks him the questions that you would like to have answered regarding the policies and methods adopted, and how you can keep in touch with the various disposal agencies.



Material Handling Costs generally add up to one of the major items in ultimate cost of acquisition to point of use. Perhaps you don't consider this as a responsibility

of purchasing, but it is one way in which you may be able to make a substantial contribution to economical operation. The case study on page 118 shows how specifying shipping methods in buying can reduce the cost of handling when materials are delivered.

This month's **Guest Editorial** (page 73) is contributed by Fred Syburg of Milwaukee, Vice President of N.A.-P.A. for District 3. He points out that much of the recent progress in purchasing has been achieved under specific pressures and incentives of crisis but with changing conditions we must now find those incentives within ourselves to meet the less spectacular but no less demanding responsibilities of normal buying. Initiative and resourcefulness will determine the future of the purchasing man. Are you a self-starter?

Cold weather ahead! And that means trouble and expense in handling **Frozen Coal**—unless you are prepared to cope with this seasonal hazard. Turn to page 113 for a comprehensive article on coal buying schedules, storage methods, chemical treatments, and car thawing equipment that can be put to good use in the handling of winter deliveries and may be the means of saving many dollars for your company in the months ahead.



The article on page 85 explains in detail how a single **Stock Record** system was developed to coordinate the flow of information, eliminate clerical duplication, and provide a dependable basis for stores control and ordering procedure. There are many features in this plan that may be directly applicable to your own operation. In more general terms, the article on page 94 presents an orderly and basic approach to the entire problem of **Purchasing Procedures**.

Don't overlook these regular monthly departments, compiled for your information: the Washington Report (page 13); New Catalogs (page 17); New Equipment and Products (page 132); News of Your Suppliers (page 22), of Association Activities (page 190), and of Men in Purchasing (page 254); Keeping up to date on such developments makes for better buying.

COMING—IN NEXT MONTH'S ISSUE

How to Make Time for Improving Purchasing Methods
Also: Interviews — Castings — Manuals — Purchase Law



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The New Challenge to Purchasing

By Frederic G. Syburg



Frederic G. Syburg is Director of Purchases for the Chain Belt Company, Milwaukee. He is currently serving as Vice President of the National Association of Purchasing Agents for District 3, representing the Central Iowa, Chicago, Denver, Kansas City, Milwaukee, Rock River Valley, St. Louis, Tri-City, Twin City, and Twin Ports Associations on the National Executive Committee.

A native of Milwaukee, he took his college work at the University of Wisconsin, where he majored in Business Administration. He started with Chain Belt in the summer of 1916, but his budding business career was promptly interrupted by World War I, in which he served for two years with the 120th Field Artillery, 32nd Division.

Following his military service, he returned to Chain Belt in 1919 in the student training program. For the next seven years he had a varied experience, including assignments in Production Control, General Sales, and Export Sales. For 15 months, in 1925-1926, his work took him to New Zealand, Australia, and the Far East. In 1927 he was called back to Milwaukee to become Purchasing Agent, and in 1945 he was appointed Director of Purchases, supervising procurement activities for the company's six plants in Wisconsin, Massachusetts, Illinois, and California, and the Canadian subsidiary.

Mr. Syburg joined the Milwaukee Association of Purchasing Agents in 1927, upon entering purchasing work, and has been one of its active workers and leaders, serving as President in 1947-1948 and National Director the following year. In national affairs, he took over the chairmanship of the dormant Iron and Steel Committee of N.A.P.A. in 1947 and revitalized it to become an important and valuable part of the national program. He was a member of the Shipman Award Committee in 1953.

Fred Syburg makes his home in the Village of Chenequa, 30 miles west of Milwaukee, and has given generously of his time and ability to civic affairs. When he recently retired as Village Trustee, the occasion marked the completion of 25 years of continuous service in various official capacities. He is a vestryman of St. Peter's Episcopal Mission in the neighboring Village of North Lake, Wisconsin. He has two married sons, and three grandchildren. His principal recreation is sailing, the current major enthusiasm being cruising on Chesapeake Bay. His hobbies are woodworking (including boat building) and forestry.

PURCHASING AGENTS have proved that they thrive on adversity. For a period of nearly fourteen years, except for that short breathing spell in 1949-1950, they have had one obstacle after another thrown at them. First, there was

war, with its unprecedented demand for the materials of war, complicated by conversion to the production of unfamiliar products in many cases, and by priorities, restrictions, quotas, substitutions, price regulations, and contract terminations.

Then came reconversion, with great pent-up civilian demand, sellers allocating their products, withdrawals from distant markets, and departures from historical distribution patterns. Finally, war again—guns and butter this time, with the procurement problems of both. Purchasing rose to these challenges and successfully met the difficulties, and gained new stature in the process.

A year ago, we began to look forward to an easier time, to the balancing of supply and demand. We keenly anticipated the end of our worries when surplus would succeed shortage. This hoped for change has come. It has slipped in gradually—with no sharp dividing line, but with sharp contrast between last year and now. The easier time should have arrived. But has it?

There is a world of difference between the achievement of a goal when being driven to it from all sides, and the attainment of a less spectacular objective under one's own steam. When management, production, and sales departments were all breathing down the purchasing agent's neck for more and more materials to feed the production lines and sustain forced draft operations, the stimulus to do an outstanding, resourceful job came from outside ourselves. The spotlight was on us. We had to sink or swim.

Today, much of this outside pressure is off. Purchasing departments are no longer automatically in the position of having a spotlight trained upon them. Purchasing accomplishments must now be achieved by self-generated initiative, by planning, by substantial contributions to lower costs to protect the profit

margin. Future evaluation of the purchasing function will be based on how well we perform as managers under these calmer and more normal conditions.

Whether the business community will hold the purchasing agent of 1955 or 1960 in greater or less esteem than he now enjoys will depend on

the way he meets this tougher-than-ever challenge to his managerial ability—the challenge for proficient, noteworthy accomplishment without benefit of recurring crisis. This is not an easy task, but one that will take all the hard working energy and resourcefulness we possess.

Make Typewriter Care a Habit

By David Markstein

Three-minute daily workout will add months to the useful service life of your hard working office equipment.

"ONE of the hardest working machines at any firm is also, paradoxically, the one that usually gets the least care," an office equipment expert said recently. "I'm referring to the typewriter. Heavy machinery gets regular maintenance service; so, in greater or less degree, do most other machines which represent a capital investment. But the typewriter—with a price tag well into three figures, and called upon to work practically continuously, day in and day out—is cared for, in most places, only when it breaks down."

What can be done by way of simple preventive maintenance to prolong the periods between breakdowns, and perhaps avoid them altogether? George L. Hossfield has been the world's professional typing champion ten times. He recommends a simple "Three-Minute Daily Workout" for typewriters including these steps:

First Minute: Wipe off all exposed parts with a soft dry cloth, and get into the corners by using a long handled brush. Dust and dirt are real enemies to the long life of a typewriter.

Second Minute: Clean type with a dry bristle type brush. Brush

toward yourself to keep dust from getting into the mechanism. Then you'll have clean-cut type characters and uniform impressions.

Third Minute: Remove the dust and erasure dirt from the whip ring (a narrow band of steel on the center of the segment) to produce finer work. Use either a dry cloth or a brush.

In addition, Hossfield suggests these "Weekly Workout" steps:

1. Clean and protect the rubber platen with a cloth moistened with a little denatured alcohol.

2. Lubricate the carriage way-rod. Move carriage to one side and wipe with cloth slightly moistened with light oil, then move carriage to the other side and repeat this operation. Also lubricate marginal stop rods located beneath the front centering scale plate.

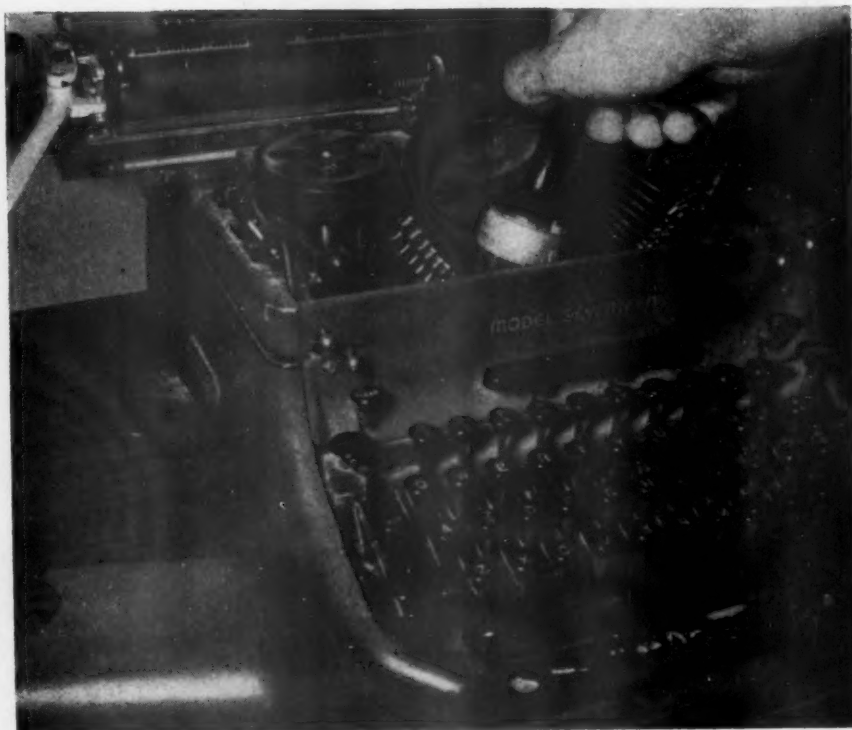
3. Turn over the ribbon. Doing so will make it last longer and improve the appearance of the work.

Also worth remembering, Hossfield says, are these details which should be made a habit in operation:

Save undue wear on the rubber platen of your machine by always using a backing or second sheet under the original or bottom sheet of your work to cushion the impact of the type bars.

An erasure shield is a helpful aid. It prevents dust, dirt, and erasure crumbs from falling into the typewriter mechanism.

A cover will keep unnecessary dust and dirt from getting into the machine when it is not in use. It should be used regularly, whether the machine is on a stand, or in a drop center or slide drawer desk.



HOW THE NEW TAX LAW AFFECTS PURCHASING

By William Meyers

AUTHOR'S NOTE: In discussing the implications of the new tax law, the writer trusts that he has not overemphasized the importance of the tax factor in connection with the purchasing agent's job. The new law, in liberalizing depreciation rules will certainly cause a substantial reshuffle in purchasing thinking—but whether or not a given purchase will be made will continue to depend upon an intelligent combination of sound business and economic reasons as well as on tax considerations.

Mr. Meyers is an Attorney and Certified Public Accountant, specializing in tax matters. He is a member of the firm of Schwartz & Meyers, New York City.

"SHOULD WE acquire capital equipment by lease or purchase?" was the subject of a survey reported in the February 1954 issue of **PURCHASING**. A reexamination of this question is extremely important at this time because of the new tax law.

Many changes in the new law affect purchasing agents as individuals. The one overwhelming change, however, which affects you in your capacity of purchasing agent lies in the area of depreciation. Briefly, the change is this: your depreciation deduction in the first year of a machine's life will be twice that allowed formerly. This new rule will have a marked impact on purchasing policies in many ways. Replacing capital assets annually may prove to be the most economical policy. The trend will be away from rentals of equipment in many fields. The used equipment market will find fewer buyers.

Now, for an example: You are in the market for a machine which costs \$10,000 and has a useful life of 10 years. You can acquire it in one of three ways.

1. If you rent it, at \$3,000 per year rental, your *total after-tax cost for the 10-year period* will be \$15,000.

2. If you purchase the machine and hold it for its useful life the cost will be \$7,500.

3. If you purchase the machine and replace it with a new one each year, the cost will be \$2,500.

These figures, based on the tax and depreciation factors, are explained in a succeeding section.

The old tax law allowed most taxpayers depreciation deductions based on the straight line method. The cost of a machine (less its salvage value) was divided by the number of years of useful life to determine the annual rate of depreciation, which was constant throughout the life of the machine. The new law allows twice this rate, based on a declining balance—the amount which remains after deducting depreciation previously allowed. This provision applies only to property new in use after December 31, 1953. In the case of our machine, costing \$10,000, and with no final salvage value at the end of a useful life of 10 years, depreciation allowed under each of these methods would be:

| Year | Straight Line | Declining Balance |
|------|---------------|-------------------|
| 1 | \$1,000. | \$2,000. |
| 2 | 1,000. | 1,600. |
| 3 | 1,000. | 1,280. |
| 4 | 1,000. | 1,024. |
| 5 | 1,000. | 819. |
| 6 | 1,000. | 655. |
| 7 | 1,000. | 524. |
| 8 | 1,000. | 419. |
| 9 | 1,000. | 336. |
| 10 | 1,000. | 268. |

Use of the new method produces

some interesting results. A 3-year asset may be depreciated 66 2/3% in the first year. A 25-year asset would recover one-half its cost in 9 years. Generally, an asset would be depreciated 40% in the first quarter of its life, and 2/3 of the cost in the first half.

Alternative Policies

Let us get back to our example to determine the effect of the new law on our purchasing policies and to explain the 10-year total cost figures which have been cited.

Assuming a 50% tax bracket, the \$2,000 deduction in the first year, using the new declining balance method, will save \$1,000 in taxes. If you sell or trade-in the machine for \$9,000 at the end of the first year, and use that money, with the \$1,000 saved, to purchase a new one, you have a new machine without any additional outlay of capital. You may then take a \$2,000 deduction once more in the second year and repeat the process. Your only cost will be a capital gains tax of \$250 each year on the excess of the trade-in value (\$9,000) over the adjusted basis of the machine (\$8,000). For a 10-year period, therefore, the total after-tax cost to you will be \$2,500.

If, on the other hand, you were to keep the machine for its 10-year life, the depreciation deductions on the straight line basis will total \$10,000. The expense of major repairs and maintenance will average about 5% a year, or \$5,000 for the 10 years, for a total of \$15,000 in deductions. With your company in the 50% tax bracket, the total after-tax cost to you is thus \$7,500.

If you were to rent the machine for the sum of \$3,000 a year, the total 10-year cost would be \$30,000, or an after-tax cost of \$15,000.

It therefore becomes possible under the new law for you to replace the \$10,000 machine annually at a net cost of \$250, or 2.5% of its original cost per year, with the benefit of having new, modern equipment all the while. The following table illustrates the annual cost of replacing assets which have other lengths of useful life.

| Useful Life of the Asset | The Cost to Replace It Annually (as percentage of original cost) |
|--------------------------------|--|
| 3 yrs | 8.33 % |
| 4 yrs | 6.25 % |
| 5 yrs | 5.0 % |

| | |
|--------|--------|
| 6 yrs | 4.167% |
| 8 yrs | 3.125% |
| 10 yrs | 2.5 % |
| 12 yrs | 2.083% |
| 15 yrs | 1.667% |
| 20 yrs | 1.25 % |
| 25 yrs | 1.0 % |
| 30 yrs | 0.83 % |

Thus an asset which costs \$10,000 and has a 5-year life may be replaced annually at a cost of 5% of \$10,000, or \$500 a year, and one costing \$10,000 with a 20-year life may be replaced annually at a cost of \$125 per year.

It should be noted that the above computations are based on the supposition that the resale or trade-in value of the asset at the end of its first year will equal its depreciated value on the straight line basis, or, as in the case of the \$10,000 machine, that its resale value at the end of the first year will be \$9,000. If the resale value turns out to be lower, however, the cost of replacing it will of course increase.

For example, if the resale value should be only \$8,500 instead of \$9,000, it will cost you an additional \$500 to replace the machine, but at the same time your capital gains tax will decrease from \$250 to \$125. Therefore the annual replacement cost becomes \$625, and the total after-tax replacement costs for a 10-year period will be \$6,250 when the machine's resale value at the end of the year is \$8,500.

Similarly, the annual replacement cost will be \$1,000, and the total

10-year costs \$10,000 if the resale value at the end of a year is \$8,000.

Other Depreciation Problems

Full Recovery. In assessing the two methods, however, it should be emphasized that the straight line method insures the full recovery of cost at the end of an asset's useful life, whereas the declining balance method leaves an unrecovered portion of some 8% to 13%. Thus, if you plan to keep an asset for its entire life, the attractiveness of the declining balance method is considerably lessened.

To deal with this problem, the new law permits taxpayers to switch from the declining balance to straight line depreciation at any time in the life of an asset. The straight line rate would then be based on the remaining life of the property, applied to the depreciated balance of the asset at the time of the switch.

Another Solution. The new law offers another solution to the problem of unrecovered cost. It gives you the option to use the "sum-of-the-years' digits" method of depreciation. This method permits you to obtain essentially the same results as the declining balance method, while insuring the full recovery of cost at the end of an asset's useful life. This is how it works:

If a machine has a 10-year life, the rate of depreciation for the first

Comparison of Depreciation Allowances, under Three Alternative Methods

(Cost of Asset—\$10,000—Useful Life—10 yrs—No Salvage Value)

| Year | Straight Line Method | Declining Balance Method | Sum-of-the-Years' Digits Method |
|---------------|-------------------------|-----------------------------|------------------------------------|
| 1 | \$1,000. | \$2,000.00 | \$1,818.20 |
| 2 | \$1,000. | \$1,600.00 | \$1,636.40 |
| 3 | \$1,000. | 1,280.00 | 1,454.50 |
| 4 | 1,000. | 1,024.00 | 1,272.70 |
| 5 | 1,000. | 819.20 | 1,090.90 |
| 6 | 1,000. | 655.40 | 909.10 |
| 7 | 1,000. | 524.30 | 727.30 |
| 8 | 1,000. | 419.40 | 545.50 |
| 9 | 1,000. | 335.50 | 363.60 |
| 10 | 1,000. | 268.40 | 181.80 |
| Total: | \$10,000. | \$8,926.20 | \$10,000.00 |

year will be 10/55 of the original cost. The numerator of this fraction is the remaining number of years in the useful life of the machine, and the denominator is the sum of 1 plus 2 plus 3 plus 4 plus 5 plus 6 plus 7 plus 8 plus 9 plus 10. In the second year, the rate of depreciation will be 9/55, in the third year 8/55, in the fourth year 7/55, and so on until the tenth year, when it becomes 1/55.

If the machine has a 5-year life, the denominator will be 15 instead of 55.

Thus, using our example of a \$10,000 machine with a useful life of 10 years and no salvage value, a comparison of the depreciation allowances for each of the ten years under the three methods would be as shown in the accompanying table.

Depreciation Allowances Limited

Used Equipment. It is important to note that the liberalized depreciation methods in the new tax law are limited to property new in use and therefore never before subject to depreciation allowances. This means that used machinery purchased in 1954 or thereafter cannot be depreciated under the new method. Of course the purpose of this provision is to discourage transfers and exchanges of partially depreciated assets among taxpayers simply to obtain the high initial depreciation deductions of the new method. But since the new law furnishes a strong inducement for the purchase of new equipment, an unlooked-for result of this provision will undoubtedly be the depressing of the market in used machinery.

Useful Life. Aside from the method, the element which causes the most trouble in measuring depreciation is the determination of the useful life of property. This is always a bone of contention between taxpayers and the Bureau of Internal Revenue, the taxpayers tending to use a short life in order to increase the rate of depreciation and the Bureau taking the opposite view.

In determining the useful life of a piece of machinery, these are the principal factors that should be taken into consideration: the physical life of the equipment, its rate of obsolescence, and the maintenance policy of your company. Other factors that may also have a bearing on its useful life are the type of labor or personnel who will be operating it, the kind of raw material upon which it is intended to be

used, and the number of shifts it will be in use under normal operating conditions.

Your maintenance policy is a factor in determining useful life. Machinery will have a shorter life if you are unable to afford an adequate maintenance policy which may require periodic shut-downs, sufficient staff of repair men, inventories of spare parts, and so on. The rates of depreciation in Bulletin F, issued by the Bureau of Internal Revenue, contemplate a reasonable expense policy for maintenance to keep the property in fair operating condition. If your business conditions are such that more or less than average maintenance will be incurred, your depreciation rates should be adjusted accordingly.

Accelerated Depreciation. In discussing useful life, a word should be said about accelerated depreciation. In many businesses, equipment is subject to hard usage and unusual wear and tear. For one thing, second-hand machinery is often used. For another, the necessity of continuous operation and lack of proper maintenance tend to limit the useful life of a machine. The Bureau recognizes this, and under certain conditions permits companies to accelerate the rates of depreciation on their equipment.

Accelerated depreciation may thus be permitted because of such

factors as overtime operation of equipment, inexperienced operators, and the use of machines upon work for which the machines were not designed. Where such conditions exist, the Bureau will take them into consideration and may allow the accelerated depreciation rate.

But note that accelerated depreciation will not be allowed unless it can be shown that maintenance did not compensate for the increased use and arrest the accelerated wear and tear. The mere proof of abnormal use of the machinery will not entitle you to an increased allowance. It must be shown that the abnormal use of the machine specifically shortened its useful life.

Keeping Records. It should be apparent that adequate records must be kept in order to obtain the maximum depreciation allowance. Despite all that has been said concerning depreciation methods, the use of these methods may fail to help you get the full deduction if your depreciation records are incomplete. You should keep an adequate card index or other system in which you record the data entering into the computation of the depreciation for every piece of equipment you own, for your records must substantiate the depreciation deductions on your company's tax return.



"I'm going to see how much he really wants our business."

Unit Container Method for Convenient, Safe Shipping

How Sperry Gyroscope Company found the answer to a complex packaging problem in handling a heavy, fragile assembly

By George J. Newhams

PROBLEMS of packaging, handling, and transporting large complex assemblies for Army Ordnance have been solved by Sperry Gyroscope Company through the use of reusable steel unit containers especially adapted.

The Sperry-manufactured Skysweeper fire control system for the new 75 MM artillery machine gun, consists of several component parts which are assembled on arrival at military destinations. The unit is large, weighing about 3 tons, and contains fragile parts. Safe packing and transit are essential.

The answer was found in welded steel Transportainers, developed by Dravo Corporation for cargo handling in oceanic shipping. The device has found wide acceptance in that field, some 2,500 being in use, on 30 steamship lines. The standard model was slightly modified to meet Sperry's requirement, and fitted with special channels and framework to receive the Skysweeper components. 120 are in use.

The packing operation requires less than 3½ hours per unit, as compared with two days if the components were crated separately. Substantial economies in packaging materials are also realized, since, except for plastic dust covers, no part of the assembly has to be wrapped or crated. Floor space required is also at a minimum.

Chances for errors in packing have been eliminated by this method. Channels, metal baskets, and other fittings in the Transportainer are numbered to correspond with the parts they are designed to hold, and physical design of the fittings is such that they can be used only for the parts they accommodate. Parts are placed in the container in numerical sequence. There is little chance that an

assembly could be shipped incomplete.

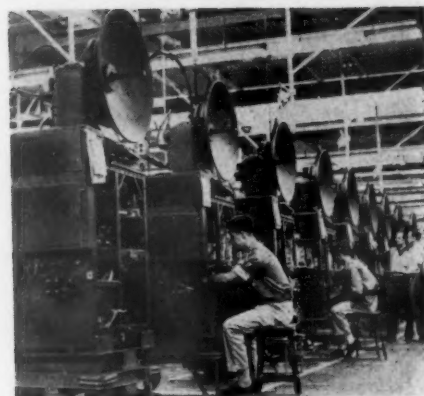
Corresponding convenience and economy of time is provided in unpacking. With all integral parts of the unit clearly marked and identified within the container, they can be removed at destination in proper sequence for immediate assembly, without preliminary checking and sorting. The assembly can be stored in the container, indoors or outdoors.

Once the container is loaded with the complete assembly, the entire unit is moved in a single operation by one lift truck, or with crane and sling. Dimensions make it suitable for transporting by truck or railroad car, ocean vessels, or inland waterway barges.

Scientific design and welded construction withstand the strains of handling and transport, while the special fittings that secure component parts inside the container protect them against impact damage.

From the standpoint of safeguarding military information about the assembly, the Transportainer shipping method is well adapted. When locked and sealed, it is virtually a "jumbo safety deposit vault." It does not have to be identified outside as wooden crates would have to be, and there is no chance for loss or pilferage.

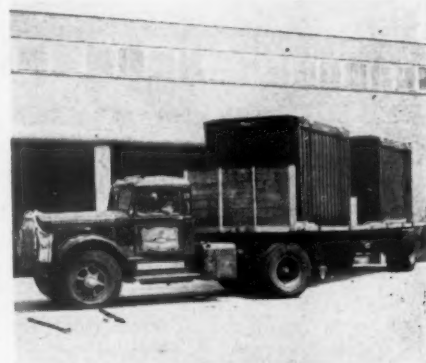
Although the steel containers are normally reshipped or "dead-headed" back to the Sperry plant from the Ordnance depot after the assemblies have been removed, for re-use, the total cost of shipping them both ways does not differ appreciably from an ordinary one-way shipment, in Sperry's experience. Measuring the round-trip shipping costs against the many savings resulting from the use of the container, extra expense of the return trip is found to be negligible.



Skysweeper fire control systems in quantity production at Sperry plant.



Component parts of radar assembly fit into "tailor-made" container.



Each assembly is handled as a unit; containers are returned for re-use.



Ready for action: the most effective known defense vs. high-speed aircraft.

How Should Charges for REWORKING DEFECTIVE MATERIAL Be Handled?

Reworking defective or sub-quality material in the buyer's own shop, or undertaking additional operations to put it in use, involves extra costs that are properly the responsibility of the vendor. We asked industrial purchasing agents how costs might be apportioned and charged back to the vendor and what vendors' attitudes have been. Their combined answers follow.

① a. Do you have a definite policy on charge-backs for correcting vendors' defective material or workmanship in your own shop ?

Yes ————— 54 %

No ————— 46 %

b. Is this policy stated in the terms of your purchase order

Yes ————— 21 %

No ————— 79 %

c. Is your policy flexible, in the interest of maintaining good vendor relations

Yes ————— 97 %

No ————— 3 %

② Are your charge-backs for reworking at your plant based on: ?

a. Hourly labor rates only

Hourly labor rates only 32 %

b. Total labor costs, including fringe benefits

Total labor costs, including fringe benefits 10 %

c. Direct labor cost plus full shop overhead

Direct labor costs plus full shop overhead 44 %

d. Additional cost of extra inspection and handling

Additional costs of extra inspection and handling 14 %

③ Do you estimate rework charges and get vendor's approval before starting ?

Yes ————— 87%

No ————— 13%

④ Do you absorb rework costs, which are a vendor's responsibility provided they do not exceed a certain amount ?

Yes ————— 53%

No ————— 47%

⑤ If rejected material is sent back to vendor for correction or replacement, do you charge back transportation costs ?


One-way ————— 21%

Both ways ————— 75%

None ————— 4%

⑥ What is the general attitude of the majority of vendors in respect to rework charges. ?

Obstinate —————  ————— 2%

Willing to negotiate —————  ————— 25%

Reasonable —————  ————— 64%

Liberal —————  ————— 9%

WHAT THEY SAY

"When business is done with a good, reliable source, this is not a problem. A good supplier will never let this be a source of irritation."

"We will do more than our share to please the vendor."

"Some vendors do not realize that they must furnish first class workmanship—many of them have concentrated on volume and not quality in the past."

"A 'give and take' attitude should be maintained by both sides. However, there is no excuse, in these times, for delivery of items in which there is poor and careless workmanship."

"Here you must build a careful vendor-buyer relationship over the years or you will meet opposition to such requests."

"Prior approval from vendor is greatest single step in getting satisfactory settlement."

"We try to buy from reputable vendors who stand back of their material."

"No one makes a profit on rejects."

"When vendor relationship is sound and complaints justified, there is never a problem."

"Rework in your own shop is not good but sometimes necessary to meet production requirements. I strongly believe, however, that charge-backs should be 'out of pocket' costs only."

"We think it is cheaper to repair some 'fair' material than to pay for 'premium' material."

"We are careful to treat vendor fairly in all cases."

"Change the vendor after the second or third offense."

"This is a nuisance that we would like to minimize."

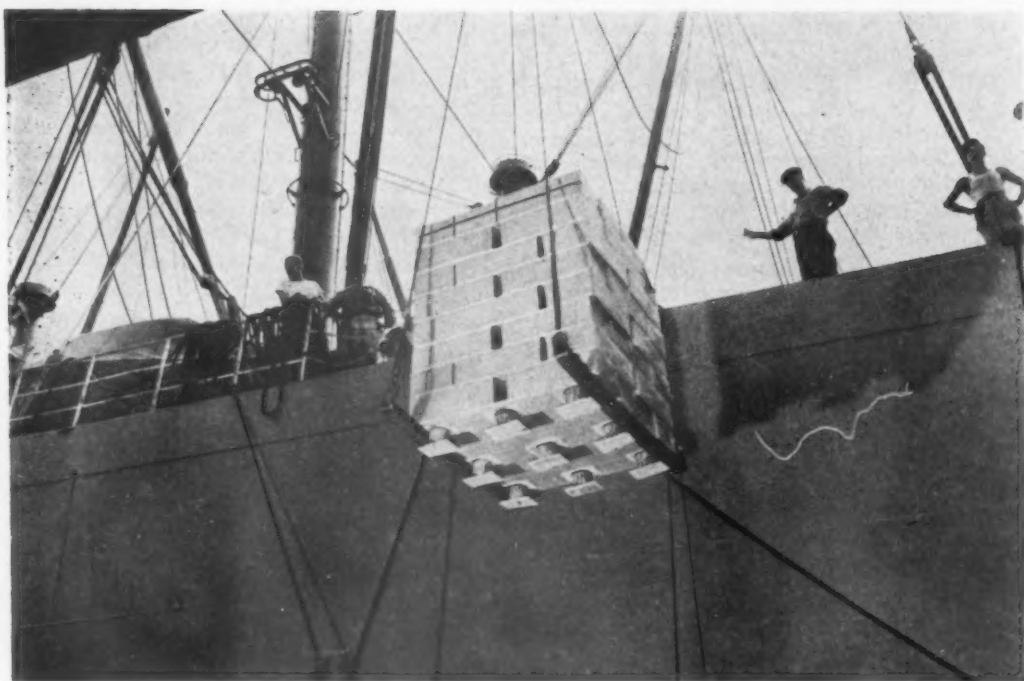
"Most of the reworking could be prevented if the vendors were more careful with inspection prior to shipment."

"We feel that expensive rejections will improve vendor inspection before shipment."

Buyers, like sellers, are extending their horizons

Import Purchasing

By James M. Berry, Purchasing Agent, Vick Chemical Co., Greensboro, N.C.



American buyers are turning more and more to competitive foreign sources of supply for a variety of industrial materials and products.

A BROADENING of competition through investigation of new sources is required, and definitely pays off, in the normal buyers' market which has been an increasing reality over the past two years. Each of us can cite almost daily experiences of purchase cost savings resulting from wider inquiry, both by purchases from new sources and by applying competitive pressure to old suppliers.

With the "shrinking" of the world through faster communication and transportation and increasing international trade, the same principle of broadening competition can be extended to foreign producers. Air

mail and the almost universal use of the English language enable economical interchange of thought with sellers in almost any part of the world within a week to 10 days. I have had detailed replies to letters of inquiry within a week from Germany and Portugal, and in 9 days from Japan.

Policy Questions

The desirability of purchasing from foreign sources is often questioned, principally by domestic producers who are either unable or unwilling to meet this competition. Similar objections against interstate buying were advanced by local

sellers following World War I. The present sentimental "Buy American" appeals are manifestations of the same symptoms.

Since World War II, we have poured dollars into foreign countries to rebuild their economies, encouraged, at the very least, by American manufacturers seeking export markets. As foreign production facilities revived, they had to have outlets for their manufactures. "Trade—Not Aid" was advanced as a solution, and it almost boils down to a choice between the two—or losing our export markets.

It is up to each purchasing executive, within the scope of his' au-

thority or the over-all objectives of his company, to determine his policy with respect to import purchasing. His materials costs, and in some cases quality, will compare unfavorably with those of his competitors, however, if he doesn't take advantage of foreign raw materials, machinery, and manufactures available either from importers or directly from overseas sources.

The simple fact is that, whether we like to admit it or not, substantial quantities of chemicals, steel, cement, machinery, and even textiles, as well as the higher labor cost handcraft items, have been and are being imported into this country, of a quality equal or superior to our own products, and usually at substantially lower costs despite significant protective import duties.

George L. Mitchell, General Purchasing Agent of Atlantic Coast Line Railroad, wrote me from Wilmington, N.C., recently as follows:

"I went through the North Carolina States Port Authority Warehouse in Wilmington a few weeks ago and was amazed at the tonnage of steel fencing and barbed wire that had been received from abroad and was awaiting distribution to customers. In 1953 some one and one-half million tons less of American steel was exported to foreign markets, with a further decline in 1954. I think it may be reasonably assumed that, with basic prices of American steel being increased around \$3 or more per ton, foreign steel will be imported into the United States in greater quantities than heretofore and become a formidable competitor of American steel."

Problems Involved

Import purchasing involves, of course, distinct problems and hazards not experienced in purchasing from reliable domestic sources. These difficulties can be minimized, and sometimes avoided entirely, by purchasing from importers rather than directly from the foreign sources. In many cases, the service of the importer is worth the extra costs involved, but direct foreign contacts afford the opportunity to obtain the best competitive prices and a quicker and more accurate reflection of market conditions.

The problems and hazards involved in purchasing materials of foreign origin (some of which can be avoided by using importers) are:

Longer anticipation of requirements (time to obtain).

Larger inventories (against uncertain delivery time).

Prepayment (through letters of credit).

Legal requirements (import restrictions and duty).

Documentation and insurance.

Customs clearance and forwarding.

Risks (delivery, damage in transit, quality, quantity).

Documents Required

The following documents usually are required on direct import purchases under letter of credit, against which the seller draws and obtains payment in the country of origin or upon presentation to a bank in the United States—in either case, some time before the merchandise is received:

Clean Order-Notify Bills of Lading signed by carrier's agent accepting the shipment as in good condition and without customary release of domestic ladings "Shipper's load and count", and conveying title by endorsement.

Consular Invoice—issued by U. S. Government representative in the country or port of origin (required for importation from most countries, but carrying no assurance in itself that the material covered may be permitted entry).

Certificate of Survey—identifying the particular goods sampled, weighed, and shipped—often incorporated by the particular wording used in other documents.

Certificate of Origin—attesting the country of production or manufacture, and in some cases certifying that neither the material nor the owners or shippers have been involved with certain Iron Curtain countries or their nationals.

Certificate of Analysis—by governmental or commercial testing laboratory.

Certificate of Weight—by shipper or governmental or commercial weigher.

Certificate of Insurance—if covered by shipper.

For certain commodities originating in specified countries, the Office of International Trade of the U.S. Department of Commerce requires import permits, which are obtained from the New York Federal Reserve Bank, acting as agent of the OIT. This restriction was added to Customs regulations about 18 months ago by our Government, primarily to implement the prohibition of imports of materials originating in Communist China.

Foreign purchases also involve a dictionary of traffic terms and abbreviations, including:

F.A.S.—Free alongside (steamer at port of origin).

F.O.B.—Free on board (steamer at port of origin).

C.&F. (or C.A.F.)—Cost and freight (to port of discharge).

C.L.F.—Cost, insurance, and freight (adding marine insurance to port of discharge).

C.I.F.&E.—C.I.F. plus risk of exchange fluctuations (by seller).

and that classic:

E.&O.E.—Errors and omissions excepted (similar in effect to our own admissions of inefficiency—"Dictated but not re-read").

Foreign Source Development

It is obvious that the best and most carefully drawn documents do not insure always that the merchandise will be of the desired or intended quality, nor that full measure or weight will be received. Advance samples received by air mail, the reputation of the shipper, and experience in dealing with him, have similar value and importance as in strictly domestic purchasing, and it is well to specify: "weights and quality guaranteed at destination by seller".

In developing and evaluating foreign supply sources, we have access to various sources of information. Notable among these are Dun & Bradstreet reports, banking firms with foreign branches or correspondents, and the Bureau of Foreign Commerce of the U.S. Department of Commerce. Personally, I also have available, of course, the contacts of the Vick International Division, which operates or has manufacturing or commercial contacts in some 118 foreign countries. This latter type of aid is available to any company having foreign branches, distributors, or affiliates.

It is possible to subscribe with Dun & Bradstreet for a world-wide report service similar to that available covering domestic firms, and the Bureau of Foreign Commerce has available a wide variety of current market and trade information on foreign sources and commodities.

One valuable source of information is the World Trade Directory reports, compiled by the Commercial Attaches of American embassies, Consuls, or representatives of the U.S. Department of Commerce or other Governmental agencies in foreign countries. These reports are

(Please turn to page 302)

Operation Clean-Sweep

Squeezing the surplus out of the nation's huge military inventory

An interview with **RALPH C. SPENCER**, Staff Director, Disposal Division, Office of the Assistant Secretary of Defense—Supply and Logistics.

By A. N. Wecksler, Washington Editor



"Operation Clean - Sweep", as the Department of Defense has named its surplus disposal program, recalls to industry the liquidation of World War II surpluses. Is there any parallel?

No. Operation Clean-Sweep's purpose is to rid the military supply systems of unneeded personal property. In addition, the program is geared to reduce inventories to an

extent commensurate with present military strength, making possible more realistic stock levels of supply.

Then there isn't the large volume of industrial surpluses due to termination of contracts, such as developed during World War II. How much is there?

We don't know the exact extent of our surpluses at any given time. The improvements which are being

made in supply management, to which I just referred, will help. There are approximately four million items in the military supply system, and any of them may become surplus. We do know that there are millions of dollars of surplus, in terms of acquisition cost figures.

Could you give us more details, as to quantity and type?

Not much more than I indicated. There have been large quantities of spare parts for automotive, construction, marine, and aircraft equipment. Most of this surplus represents items which have become obsolete because of the rapidly changing items of war, and their related parts. The replacement of reciprocating engines in aircraft for jet propelled, a new vehicle fleet, and the new weapons program are good examples.

At what rate do you plan to sell the surplus?

As soon as there is no identified need for an excess item, it is reported and screened against the requirements of other Government agencies. If there are no such requirements, it is disposed of. We are

RALPH C. SPENCER has the background of both buying and selling experience. He is a newcomer to Government service—a member of the team that the Administration has recruited to do specific (and in many instances, ticklish) jobs. He is now on leave from Sears Roebuck, where he has been working for the past 21 years.

While a great part of his experience with Sears was in sales and merchandising, he was a buyer for the company over one 10-year stretch, and during another period had an executive position that took in both merchandising policy and purchasing. As Spencer puts it, he came as near to being a Purchasing Agent as the Sears system permits. The function he filled at Sears just prior to coming to the Department of Defense was as staff assistant to the national sales manager.

aiming at a continual program of demobilizing supply. We might withhold sale of certain items temporarily, or provide other disposal, if their sale would have an unreasonable market impact.

How about the ownership of surpluses? Who has them? And to whom do they belong?

The three military departments hold this property, at depot and station levels and in military activities throughout the world. We do not know how much of such property is held by each of the services at any given time, and a central inventory of such material would be far too costly to maintain.

I understand that "coming down to Washington" is perhaps the worst thing that a prospective surplus buyer can do. What about this? Can a buyer be assured that he will be informed of the disposal of surplus in which he is interested whenever or wherever such disposal is made?

The program is highly decentralized. We seldom know what property is for sale at the hundreds of selling activities throughout the world. The best thing for a potential surplus buyer to do is to write to nearby military installations, indicating which types of surplus property he is interested in, and asking that he be notified whenever such items are offered for sale. There are other possibilities. For example, the Air Force maintains a central bidders list. To get on this list, a Purchasing Agent can contact the Air Force Disposal Officer, Consolidated Bidders' List Section, Kelly Air Force Base, San Antonio, Texas,

indicating his specific interests in surplus property.

The Army, Navy, and Marines have decentralized their disposal activities in this respect, and you have to get on each individual activity's list. For information on the location of the selling points maintained by these services, write to:

For the Army:

Asst. Chief of Staff, G-4
Supply Division
Property Disposal Section
Washington 25, D. C.

For the Navy:

Disposal Branch
Surplus Materials Division
Bur. of Supplies & Accounts
Navy Department
Washington 25, D. C.

For the Marines:

Quartermaster General
U.S. Marine Corps
Washington 25, D. C.

However, there is a central device now available whereby a Purchasing Agent can keep informed about all the principal sales of Federal surplus personal property. He may subscribe to the Department of Commerce's "Synopsis of U.S. Government Proposed Procurement Sales and Contract Awards." The annual subscription rate for the "Synopsis" is \$7. Checks should be payable to The Treasurer of the United States, and mailed to the U.S. Department of Commerce, Room 1300, 433 West Van Buren Street, Chicago 7, Illinois.

After World War II, a lot of real property—plants and real estate—was surplus. Is there any of this now?

There is some, but my office is responsible only for personal property.

How about a give-away program, such as the virtual gift of surplus equipment and tools to schools and colleges? Is anything like this in the wind?

There are provisions in existing laws for donations of certain kinds of surplus to public institutions such as schools and hospitals, and to special groups like Civil Air Patrol and the Boy and Girl Scouts. Approximately \$15 million (acquisition cost) was donated during the first quarter of 1954.

One of the problems that came up time and again in the World War II surplus disposal program was the impact on industry if large quantities of standard components, parts, or tools were dumped on the market. How do you prevent this?

We cannot always prevent impact on commercial markets when we sell large quantities of surplus. But we recognize that we have a buyers' market today, as distinct from post-World War II. We have an arrangement whereby the Department of Commerce furnishes us with technical reports on surplus items which may or do cause adverse industry impact. Disposal of these items is controlled to modify impact situations.

Mr. Spencer, you are a merchandising man. What merchandising policies and practices have you worked out for surplus disposal?

We have developed a unified merchandising program for the Department of Defense which incorporates many concepts adapted from industrial and commercial experience. This program became official on July 13 and is to be used throughout the Department of Defense.

Can anybody buy surpluses?

Anyone not working for the Department of Defense or otherwise debarred for special reasons.

What about price? What can a buyer expect to pay for surpluses?

That varies, of course, with the type and condition of the property. Commercial type items in unused condition bring a good return, as a rule. Other items in poor condition bring prices barely over their scrap value.

About the conditions of sale, to what extent is it a bid proposition, and to what extent will sales be negotiated?

(Please turn to page 282)

Stores Control and Ordering from One IBM Stock Record

By R. W. Ernst and H. O. Howard

General Aniline & Film Corp., Dyestuff & Chemical Division, Rensselaer, N. Y.

Methods improvement should be a constant concern in purchasing department administration. In the project here described, the purpose was to get maximum use and value from available data, through machine tabulating techniques. It resulted in better records and less duplication of effort, and a complete streamlining of the ordering procedure. In addition, it showed the way to important "by product" savings in the revision of other procedures.

The Authors: R. W. Ernst, in charge of this project, is Chief Accountant of the Dyestuff & Chemical Div., General Aniline & Film Corp. Harold O. Howard, who worked out the techniques of the procedure, is IBM Tabulating Supervisor for the company.

THE STORES INVENTORY at our Rensselaer, N.Y., plant consists of about 3,000 items of supplies and maintenance materials common to the chemical industry. Its total value is about \$225,000. Until recently, a considerable amount of

clerical effort was expended to maintain stock records by item in the Storeroom, and a similar record in the Property Records Section of the Accounting Department for control of units and determination of value and average cost.

In addition to this, the Tabulating Section also maintained a record by punching source documents such as requisitions, receiving slips, vendors' invoices, etc. Using average prices as supplied by the Property Records Section, requisitions were extended and priced and extended on the IBM calculating machine, and the results used for the required journal vouchers and construction and repair reports. Receiving slips and vendors' invoices were used for accounts payable control and inclusion in the Factory Ledger.

A monthly control of the Store-room inventory was tabulated each month, and the machine record compared with the inventory position calculated manually on the stock cards in the Storeroom. Differences were investigated, and corrections made to the record found to be in error.

Will One Record Do the Job?

After more than two years of operation under this system, it became increasingly apparent that the inventory arrived at by machine was consistently more accurate than the manually posted records. There-

fore, the need for the other two records was questioned. The main purpose of the record in the Property Records Section was to control the Storeroom account and determine average cost by item. The record in the Storeroom was mainly used as a reference for stock position and as a basis for ordering and follow-up. If these four requirements could be entirely met by a machine application, it was agreed that the manual records would be superfluous and could be eliminated.

We first tackled the problem of establishing value controls and machine calculation of average cost by item. To insure that all the basic documents funneled into the Tabulating Department, money controls were set up on entries into the General Ledger on purchases and special journals, and sequence was checked on pre-numbered requisitions. Disbursement units, a common source of error, were controlled by machine collation of the detail against a master deck of tabulating cards at the same time requisitions were priced.

Card codes were assigned to each type of entry, and a tabulating procedure developed to calculate quarterly average cost by item, using only those entries included in the manual averaging formula, i.e., opening inventory and receipts. The new average was then used in the

We proceeded by first determining what information would give the Storekeeper and Purchasing Agent all the information they needed to initiate a purchase order or follow-up, and at the same time make adjustments, where necessary, to the ordering factors. The following items were agreed to, and a form entitled "Stock Position List" designed for their tabulation:

1. Stock number
2. Disbursing Unit
3. Inventory, Previous Period
4. Quantity on Order
5. Material Received, Current Period
6. Disbursements, Current Period
7. Disbursements, Quarter to Date
8. Monthly Average, Previous Four Quarters
9. Current Inventory
10. Order Point
11. Order Signal
12. Follow-up Point
13. Follow-up Signal
14. Order Quantity
15. Split Shipments

Stock Position List Data

1. The *Stock Number* is a 6-digit numeric code. The first three digits are set up to represent a specific classification, such as plumbing supplies, machine parts, work clothing, etc. When inventories are tabulated, they are automatically sub-totaled by these classifications, giving management a good breakdown for com-

[illegible]

parative control purposes. Provision is made on the form for two additional digits, so that when new items are added and numbers are not available to keep the proper size sequence, 99 added digits can be used by changing to an 8-digit code.

3. The *Inventory Previous Period* is obtained by cutting a summary card at the time the Current Inventory (Item 9) is developed for the preceding week. The accuracy of this figure is controlled by periodic spot counts in the Storeroom throughout the year.

4. *Quantity on Order* is obtained by key-punching the items and amounts shown ordered but not received on the purchase and follow-up record open file. This figure could be obtained by key-punching the purchase orders as they are issued and matching against stores receipts cards, but a

5. *Material Received Current Period* is obtained by key-punching the stores receipts form as transmitted by the Storekeeper.

6. *Disbursements Current Period* is a summary card developed from the individual requisitions processed during the week.

7. Disbursements Quarter to Date is a summary card developed from the weekly cards.

8. *Monthly Average Previous Quarters* is developed on the IBM calculating machine, using the previous four quarters divided by 12 to indicate normal monthly usage. These figures are watched closely by the Storekeeper as a basis for keeping ordering factors current. When a trend is of sufficient magnitude to warrant a change, he shows new ordering factors on the tabulation, and these are key-punched and used for subsequent tabulations.

9. *Current Inventory* is developed on the tabulator by wiring to provide a net total of Item 1 plus Item 5 minus Item 6.

10. The *Order Point* is part of a master card file developed from calculations made by the Storekeeper in conjunction with construction and repair supervisors and field engineers. In most instances, it represents a normal month's average usage plus average usage during expected delivery time. Exceptions are made to this formula to maintain emergency stocks of vital equipment repair parts, where use fluctuates widely. Here the minimum may be set to cover the

We then designed a purchase and follow-up record card for use by the Purchasing Agent.

PURCHASING

When Do Catalog Statements Constitute Legal Warranty?

By Albert Woodruff Gray

THE manufacturer of an oil burner device published in a catalog distributed to its customers that it was offering to the trade a Steam-Pack Generator, S P L 50-5, which had a specified heating capacity of 7,300 E D R steam per hour.

An agreement with the manufacturer for the purchase of this boiler contained the clause, "Manufacturer shall repair or replace without charge any parts manufactured or supplied by it which may prove defective from poor material or workmanship within one year from date of installation. The foregoing guarantee constitutes the only guarantee or warranty given or assumed by the manufacturer and it is agreed that there are no implied warranties."

Escape Clause Disallowed

A lawsuit brought later against this manufacturer by the purchaser based a claim for damages on the fact that the generator had failed to fulfill the specifications set out by the manufacturer in this catalog.

The manufacturer appealed from a judgment for \$3,096.85 in favor of the purchaser, and a few months ago the Supreme Court of Pennsylvania affirmed that judgment.

"Such a protective clause," said that court in its refusal to sustain this defense, "is undoubtedly valid and enforceable if it does not contravene any policy of the law, that is, if it is not a matter of interest to the public or the state but merely an agreement between persons relating entirely to their private affairs."

"We cannot refrain from pointing out that if a manufacturer could

escape all liability for future warranties by an agreement excluding them, it would oftentimes be injurious, if not disastrous, to the business world and would open wide the door to fraudulent misrepresentations. Such an exclusion provision must be strictly construed, and, so construed, we have no doubt it was not intended to relate to future express warranties which the manufacturer might make to those purchasing its products in reliance thereon."

Dealer Held Liable

The same situation arose a few years ago in New York. A large department store published a printed circular designed to stimulate the sale of a device described as a "chinning bar" in which it was stated that a few turns of the bar with the hands would securely fasten it against a door frame and supply sufficient holding power to sustain safely 250 pounds without danger.

The purchaser put the apparatus in position, then seized the horizontal bar and swung his feet out, pendulum fashion. The bar pulled free from its fastening with serious injury to the purchaser from his fall.

In reference to the defense of the department store that there were no warranties of this bar by the seller, the court in its decision against the store, said:

"An inference was clearly warranted from the present circumstances that the department store authorized the distribution of the pamphlets. These pamphlets appear to contain representations as to the safety of the device which amounted to warranties."

Stated as Fact

In another instance of this character a printed pamphlet was circulated a few years ago in Kentucky which was in part,

"T insulation will stop attacks of termites and prevent further damage. Many thousands of homes throughout the country have been protected from termites with the T service. T insulation provides a complete chemical barrier throughout the entire structure and adjacent grounds. This blocks every possible approach of termites from their nests in the grounds. Any termites that may remain in the wood above cannot get back to the earth for moisture and soon die."

The services of this company were enlisted by a customer but the termite invasion continued unabated. In a suit for damages against the company for breach of warranty it was contended by the defense that these pamphlet statements were not warranties. In its decision the Kentucky court said:

"There were such representations as would create an implied warranty, if, indeed, the representations by advertisement did not create a warranty the same as if expressed in the contract."

"A positive affirmation of fact by a seller relating to the subject matter may constitute an express warranty if it induced the sale and the buyer relied upon it. All the circumstances of the sale, including advertisements and ensuing conversations, are to be considered in determining whether or not there was a warranty or mere expressions of opinion not amounting to a warranty. Surely the advertisements and representations here

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248 Fed. 853
276 Pac. 892, Washington

were more than ordinary 'puffing' sales talk or expressions of opinion."

Held to Positive Affirmation

A vital distinction, however, lies between catalog statements and advertising claims that are but sales promotion talk, the 'puffing' of wares that are but mere opinion, and statements of fact that are warranties for which the seller is liable in damages for their breach.

A lawsuit in California several years ago involved the sale of a pump with the assurance to the purchaser by statements in the catalog of the manufacturer that, "It delivers water without pulsation. Our pumps are balanced. They have no water hammer in the pipes. They have no jar or vibration."

In its decision that this catalog statement was a warranty that must be fulfilled by the seller, the court said of catalog statements of this character:

"The rule indeed seems to be well settled that any distinct assertion or affirmation as to the quality or character of a thing to be sold, made by the seller during the negotiations for the sale, which it may reasonably be supposed was intended to induce the purchase and was relied on by the purchaser, will be regarded as a warranty unless accompanied by an express statement that it was not intended as such.

"There is a very great difference between the positive affirmation of the qualities already referred to and the mere expression of an opinion upon a matter about which the buyer is supposed to exercise his own judgment. It must be held here that the representations made by the

seller were of facts upon which it may fairly be presumed the seller expected the buyer to rely and upon which a buyer would ordinarily rely, and the buyer actually did rely upon the representations."

Seller's "Puff" Collapses

This responsibility, often unconsciously incurred by an over zealous dealer, was even more sharply outlined in a recent suit against a St. Louis hardware company. The *Post Dispatch* in that city carried the advertisement:

"Sensational Factory Purchase of 'Safety First' Ladders. In designing our ladders the prime consideration was safety—and that is actually what you'll find in these splendid ladders. Imagine! A combination stepladder and straight ladder—strong and durable."

Blindly following the precept of the poet, "If it's in print, it's so," a customer bought one of these "Safety First" ladders that shortly afterwards collapsed. In his suit against the hardware company for the injuries he suffered the purchaser recovered a judgment for \$10,000, and in affirming that judgment the Missouri Supreme Court said:

"The seller's privilege to 'puff' his wares, enhance their quality and recommend their value even to the point of exaggeration, is unquestionable so long as his salesmanship remains in the field of 'dealer's talk', commendation or mere expressions of opinion. Particularly do the obligations of warranty not attach when the seller's talk is confined to expressions of opinion and not affirmations of fact.

"Also dependent on the circumstances, assertions in handbills and advertisements as to the quality or condition of chattels may not as a matter of law be considered as warranties and certainly not if they do not become a part of the contract of sale.

"But in addition to the outright promise or contractual obligation, a positive affirmation of facts by the seller relating to the subject matter of the sale may constitute an express warranty if it induced the sale and the buyer relied upon it."

Discount Sales Talk

This feature appeared clearly in an action based on misrepresentations made in reference to a heating device, that it had exclusive features, "Far beyond competitive devices in quality of manufacture, dependability and precision of operation."

"It is elementary," the court said of these catalog statements, "that the mere commendatory statements called 'dealer's talk' or 'trade talk' are not actionable because these are ordinarily regarded as mere expressions of opinion, not very strongly to be relied upon, especially where the parties deal upon equal terms."

Claims Not Fulfilled

This characterization did not apply to assertions printed in the catalog of a wire rope manufacturer. "The highest type of wire rope construction plus the best quality of material is represented by this rope. This rope was developed by this company to meet demands created by various uses which could not be satisfactorily filled by rope of the ordinary type and structure. It is a wire rope unequalled in strength by any other rope of the same size and purpose.

"It is a safe rope for hazardous work and its lasting qualities eliminate the frequent changing of worn-out rope, thereby affording a great saving. In all the years of logging with wire rope in every section of the timber country and under all the various conditions, this wire rope has held place as the most efficient logging rope made."

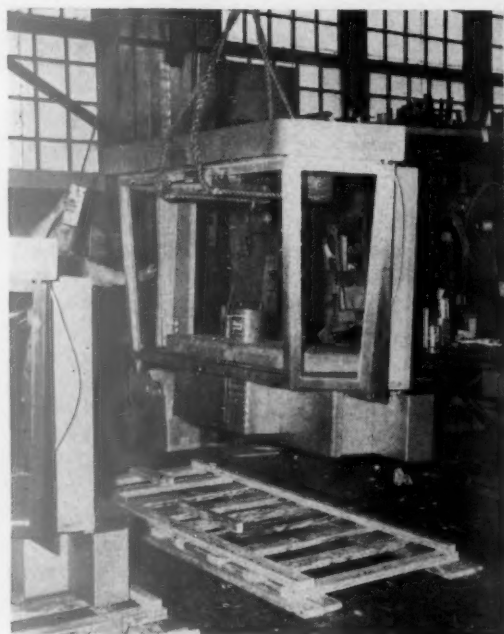
A purchaser, believing these statements and relying on them, purchased the rope and placed it on its skidders in logging. "The rope," this buyer subsequently maintained, "was weak, decayed, and rotten, and would not stand the strain, and in using it the purchaser's logging camps were constantly shut down for repairs to the rope."

These circumstances were set up by the purchaser in its defense to an action by the seller for an unpaid balance it claimed to be due for this rope. The court in sustaining an award of \$5,000 in damages said of these catalog statements:

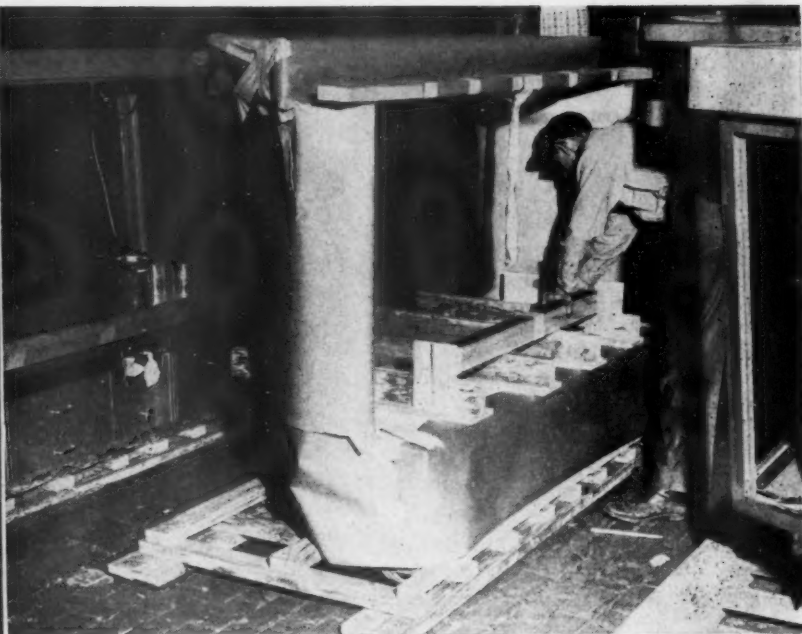
"In this case the agent of the seller carried along with him and delivered to the purchaser the seller's own printed matter containing almost the same guarantee that was made to the purchaser as to the quality of the wire rope and its ability to stand strain. The affirmations contained in the catalog constituted express warranties when the purchaser had knowledge thereof and acted thereon. We consider it immaterial whether the guarantee be that shown by the statements and representations made in the catalog or those made by the salesman."

We found a more efficient and economical way

Wirebound Shipping Containers



Left: The complete 1,384-pound unit is brought from the assembly line by overhead crane and lowered upon a specially designed, prefabricated platform that is the base for the wirebound shipping crate.



Right: Interior packing is the biggest part of the crating job under present practice. Heavy paper wrapping protects surface finishes, and pre-cut bracing keeps the heavy unit from shifting in transit.

By Cameron A. Brogden

Director of Purchases
Diebold, Inc.
Canton, Ohio

PACKING for shipment is not ordinarily a responsibility of the purchasing department. But Purchasing is rightfully concerned with all factors that go into the over-all cost of producing goods and getting them out of the plant and into the hands of customers. Hence, at Diebold, Inc., Purchasing participated actively in a packing conversion program that has brought truly phenomenal economies.

The product, in this case, was bank drive-in and walk-up window counters. Our packing and shipping department used to hammer together heavy wooden shipping containers from lumber cut to size in our own plant. Despite the fact that good grade, heavy lumber was used, and the two larger models of counter windows were packed knocked-down in seven and three different boxes and crates respec-

tively, shipping damage due to container failure was not infrequent. Furthermore, it required eight man-hours to assemble and install a counter window at destination.

Our search for more efficient and economical packing methods was exhaustive. Purchasing helped conduct numerous tests and experiments aimed at cutting packing and installation costs and improving protection to the heavy products during shipping, handling, and warehousing.

Wirebound shipping container engineers helped guide us out of our old, costly packing methods into our new program, which we conservatively estimate saves us at least \$10,000 a year in over-all packing costs, freight charges, and installation expense.

By converting early in 1953 to the use of scientifically engineered prefabricated wirebound crates, we now ship window counters completely assembled (except for the glass), and packed in a single crate. The 1,384-pound DeLux Model counter

window is 93" long over-all, stands 59" tall, is 18" wide, and is larger at the top than at the bottom. Results of the new packing program applied to this unit show the following economies:

91% saving in labor time to pack for shipment.

68% saving in over-all packing costs.

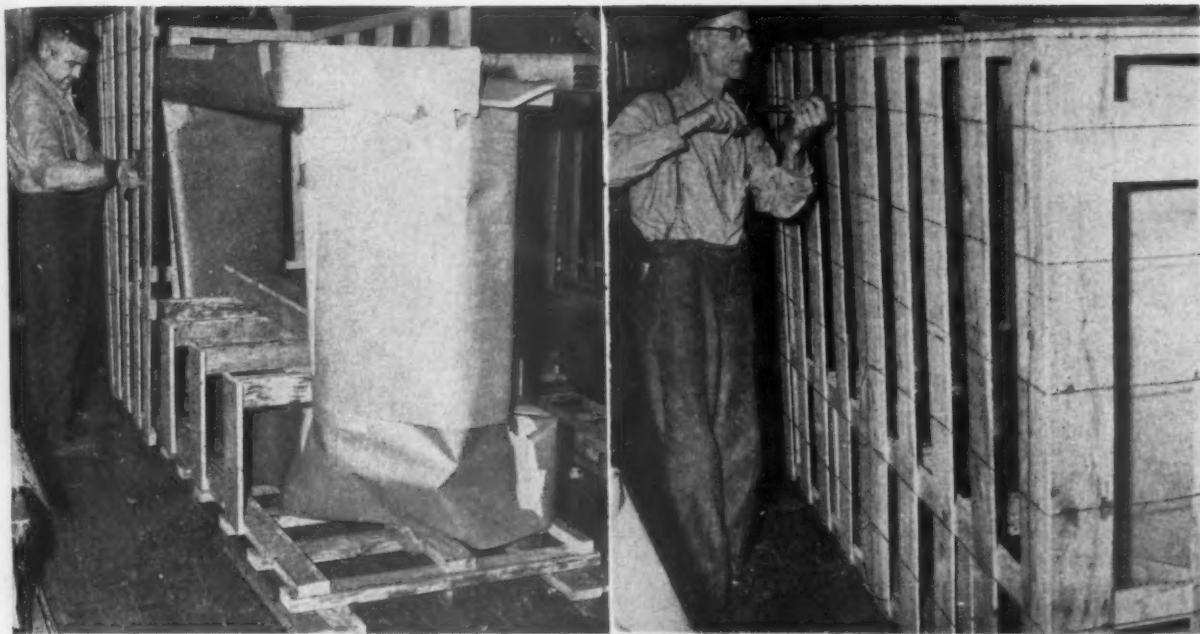
24% saving in shipping container tare weight.

75% saving in labor time needed to install the unit.

The remarkable 91% reduction in man-hours for packing results chiefly from the speed and ease with which a heavy counter window is lowered upon the sturdy prefabricated base of the crate and "wrapped up" in the prefabricated wirebound half-mats after the required special interior blocking is installed. Most of the labor time charged to packing now is consumed in putting in this interior packing and blocking required by the weight, size, and shape of the counters.

Even though we have reduced our

Cut Packing Costs by 68%



Above: Two wirebound wrap-around half-mats form the sides of the crate. Each half-mat comprises one end and half of each side. They are securely fastened to the base of the crate, then joined with twisted wire closures.

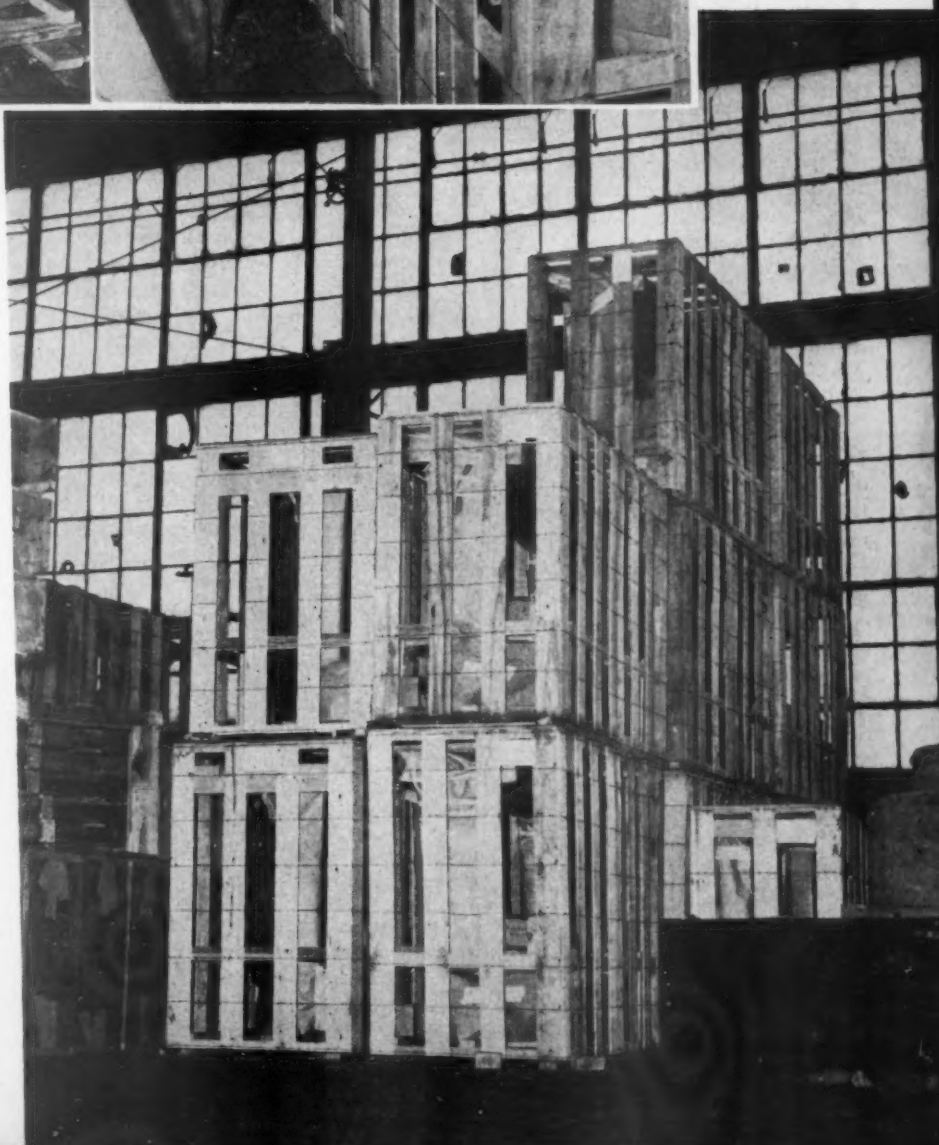
Upper Right: Final step is to place the top of the crate in position and fasten it, twist the wire closures to form a structurally strong, highly shock absorbent and resilient package ready for shipment.

Bottom Right: The shipping weight of each package is over 1,700 pounds, yet they can be safely stacked three-high. Compared to former knocked-down shipment, this method saves 100 pounds of tare weight and 8-man hours of re-assembly time at destination.

container tare weight on this unit by more than 100 pounds, or 24%, structural strength has not been sacrificed. Proof of this is the fact that we regularly stack the crated units three-high in the warehouse and on shipping platforms with no fear of even the lowest containers collapsing.

As for protection, the relatively light weight containers have proved to be so efficient that in over a year of using them we have not received a single report of shipping damage due to container failure.

Purchasing at Diebold, Inc., rightfully feels that it has helped bring about an improvement in packing and shipping practice that benefits not only our own company, but also our customers.



A Basic Approach to Purchasing Procedure

By Eugene S. Page

PURCHASING PROCEDURE is not new as a subject for discussion, writing, and controversy. Quite the contrary. If the volume of material expressed as Purchasing Procedure, and about it, is any criterion of importance, it must be a very important subject indeed. And anyone who is engaged in performing the purchasing function knows that this is so.

It appears, however, at least to this writer, that there is a void in all this discussion, which we shall attempt to fill. What are these faults, if they do exist? To summarize:

1. Management Problems. A lack in the understanding and utilization of the fundamental internal relationships, which every procedure must recognize and support.

2. Procedure Problems. Confusion as to the basic elements of a procedure and its purposes; misunderstanding as to what any procedure actually accomplishes, whether by accident or design.

3. Lack of Standardization. Absence of any systematic method of writing procedures — purchasing procedures or others—in individual companies and in industry.

Our purpose here is to make an absolutely basic approach to the subject of procedures, and to purchasing procedures in particular. We will not try to say everything that a good procedure should express. Rather, let's take a good look

at the fundamentals. A few building blocks on a sound foundation is what we are after. The rest is easy.

What Are Procedures?

A procedure is a set of rules governing action. But before we write these rules, we must know what is the proper action to be taken. The underlying principles are vitally important, completely common in scope and use, and yet extremely simple. They involve the asking of three questions, each requiring a decision to be made:

1. Why do it at all? The decision must define the reason for the action.

2. Why do it now? The decision must determine the timing and sequence of action.

3. Why do it this way? The decision must be made as to the proper method of action.

Since we have in mind all types of industrial enterprise, it is desirable to show the additional fundamental factors involved, for these are the elements on which wise decisions and effective procedures are based. So let's break this down into four basic definitions:

1. Objective. The aim of all business, of course, is to realize, consistently, the maximum net profit per unit of capital employed. The prime objective is a financial one, and the specific procedures must contribute to this aim.

2. Resources. Every business has three basic resources:

(a) *Financial Resources.* These may be owned or borrowed.

(b) *Physical Resources.* These consist of (1) land and buildings, (2) tools, and (3) inventories. They may be owned, borrowed, or leased.

(c) *Personnel Resources.* These include the owners and employees, contributing in management, production, and service capacities.

3. Decisions. Every decision is the exercise of business judgment which commit, or refuses to commit, Resources (financial, physical, or personnel) to a course of action.

4. Actions fundamentally represent the use and expenditure of Resources for the accomplishment of the basic objective.

Every business enterprise is operated according to procedures. In many companies these are not written. Nevertheless, they exist, for operation without them would be impossible. You have probably often heard the statement, "Oh, our company and our purchasing department are so small that we do not need a procedure." This, of course, is not so, because they already have a procedure.

Nor can anything be accomplished without decisions. There must be cohesive forces to tie these elements together into efficient working relationships. This force is derived from one or many procedures, oral or written. The subject underlies the entire field of commercial activity. It is one to understand and utilize.

WRITTEN PROCEDURE FOR A PURCHASING DEPARTMENT

TITLE: Purchasing Procedure

PURPOSE: To establish controls and routines for the accomplishment of all purchasing functions.

POLICY: To conduct all actions and business in a manner to obtain for the Company efficient and economical procurement, which will:

- (a) Purchase all items at the lowest delivered cost consistent with requirements of quantity, quality, and service.
- (b) Maintain sound business relationships with sources of supply.
- (c) Serve management and all departments in matters of:

| | |
|----------------------|-------------------------------|
| Price | Analysis of materials and |
| Sources | commodities, and "Make or |
| Availability | buy" decisions, for reduction |
| Commercial Standards | of costs. |

DEFINITIONS:

| | |
|---------------------------|--|
| Raw Materials | All materials, other than Commercial Parts and Sub-Contract Parts, required for further processing and incorporation into finished products. |
| Commercial Parts | Standard commercially available parts required for incorporation into finished products, with or without further processing. |
| Sub-Contract Parts | All company-designed parts and assemblies purchased from outside sources for incorporation into finished products, with or without further processing. |
| Supplies | All materials, supplies, parts, fuel, and energy required for plant and office operations, maintenance, and repairs, other than Raw Materials, Commercial Parts, and Sub-Contract Parts. |
| Capital Equipment | All machinery, and associated materials and supplies, required as replacement for, or addition to, plant and office operating equipment and/or facilities. Also, all additional and/or non-routine replacement of special tools, jigs, fixtures, and patterns required for improvement of manufacturing methods and/or first production lots or new finished products. |
| Operating Services | All services required for plant and office operations, maintenance, and repairs, other than Capital Services, involving labor and/or labor and materials furnished by an independent contractor for work to be performed on and/or off property of the Company. |
| Capital Services | All services required in the removal and/or replacement of, or addition to, plant and office operating equipment and/or facilities, or for unusual maintenance and repair, involving labor and/or labor and materials furnished by an independent contractor for work to be performed on and/or off property of the Company. |

SUBJECTS: This Procedure shall be used for all purchases of Raw Materials, Commercial Parts, Sub-Contract Parts, Supplies, Capital Equipment, and Services required by the Company, except as stated below.

Not included in this Procedure are all other items, such as:

| | |
|---|--------------------|
| Professional Services | Insurance |
| Real estate, land, buildings, space | Salaries and wages |
| Sales promotion: advertising, market research | Taxes |
| Utilities: electricity, telephone, water | Travel expense |

FORCE: All purchases of the subject items must be initiated, authorized, and completed in accordance with this Procedure, except as stated immediately below.

Those items required in emergencies involving safety of personnel or protection of property may be purchased as circumstances and good judgment dictate, and thereafter confirmed in accordance with this Procedure.

DECISIONS:

(list and define)

Functions

Initiation
Purchase
Receipt
Payment

Powers

Specific delegations of authority for making the decisions required and for authorizing action in each function, with limitations (if any) relating to type or quantity.

ACTIONS:

Forms

A list of all forms required to initiate, execute, and complete each of the four basic purchasing functions.

Flow of Paper

Specifications on the use of forms, including their preparation, execution, distribution, processing, and disposition.

(Note: Judgment is required to determine the extent to which instructions on the use and flow of paper serve a useful purpose. Generally, such "mechanical" instructions should be kept to a minimum.)

Purpose of Procedures

The fundamental purpose of every procedure, oral or written, is:

1. To require performance of the specific function involved, in a manner to contribute effectively to the business objective.

2. To establish the minimum regulations necessary for full compliance with the basic rules covering the action.

How do you develop and maintain a procedure that will accomplish its purpose? There are three basic steps:

1. **Policy.** Establish fundamental principles which will serve as guideposts in every determination of the necessity or advisability of action.

2. **Organization.** Delegate responsibility and authority to proper personnel, to make the decisions required.

3. **System.** Provide the mechanics for communicating and executing decisions.

When this has been done, you have reached the point where a course of action can be defined and put into effect by means of a procedure.

Requirements of a Procedure

The tendency in thinking about a procedure, or in writing one, is to jump into the middle with both feet, as it were, and immediately to begin working on what functions are to be performed, and what forms are needed. In other words, "Let's do it fast and get it going." Such a course ignores the important fundamentals. It is only by accident that they are brought to bear, and without any adequate consideration. To this extent, the decision, and the ensuing course of action, may be less appropriate and effective than they could be.

It is obvious that two elements in every company must be known and considered before an adequate procedure can be established. These are: policy and organization.

Policy is a basic course of action for known objectives, consistently taken under defined conditions. For each procedure, company policy on the subject must be determined. In a purchasing procedure, for instance, considerations of policy are involved with regard to such matters as:

Requirements for competitive bid solicitation and assurance of high quality, low cost procurement.

Limitations in the handling and final approvals of purchases of special commodities or in excess of defined amounts.

Quantities purchased, in relation to inventories.

Reciprocity.

Reports to management.

Organization is the arrangement and grouping of every employment position in the company, and—for each position and for the whole—the delegation of responsibilities and duties, the placement of authorities, and the formulation of all interrelationships required for the application of cooperative effort and the communication of information and ideas.

Business performance calls for action—the use of resources. Action is the result of decisions. And decisions, properly, must be made by those to whom such responsibility and authority has been granted.

Procedures establish rules for guiding these actions, including specific requirements for making, communicating, and executing decisions.

Truly, the elements of necessary and adequate procedures, oral or written, are inseparable from the fundamentals of company policy and organization. Only when these two items exist and are clearly defined, will sound procedures be prepared and maintained.

It is important also to call attention to one additional factor. When procedures of any kind are developed and used without thoughtful inquiry into policy and organization, which may well be lacking, these are in fact created—by accident or design—within the procedure itself.

Elements of a Procedure

The elements of any written procedure are few and simple, and may be arranged in an orderly manner.

I. Basis

A. Title. Function to be performed.

B. Purpose. The objectives to be served. Reasons why a procedure is necessary or desirable.

C. Policy. Company principles which the procedure will execute and support.

D. Definitions. Identification of the one or several items which will and/or will not be subject to this procedure.

E. Subjects. All items or subject matter to which the procedure applies, exactly defined by inclusion, or by exclusion of all other non-applicable material.

F. Force. Requirements for consistent use of the procedure under exactly defined conditions which contain all factors related to segments of organization, time, and special situations such as emergencies.

II. Decisions.

A. Functions. Each of the separate actions required to accomplish, together, the total purpose for which the procedure exists, exactly defined as to subject matter involved, and specifically limited as to scope.

B. Powers. Selection and appointment of personnel, and delegation to each of specific authority and responsibility for making decision on each function.

III. Actions.

A. Forms. Each special printed form required to accomplish, together, all needs for:

Communication of information

Evidence and conveyance of authority

Records

B. Flow of Paper. Specifications in the use of forms required to accomplish each function, including adequate directions for:

Preparation

Execution

Distribution

Use

Disposition

Every procedure which has a specific purpose, and adequately fulfills that purpose, on any subject, will contain most (and usually all) of these basic elements. However, it is not essential that they be presented always in the same sequence, although this would lead to a desirable standardization.

Writing a Procedure

In general, a procedure can be written either formally or informally. The formal method would follow the detailed outline rather closely as presented in the preceding section, with the three major subdivisions set apart, and formal statement of functions, powers, and mechanics of operation. The informal method would apply only the "Basic Elements" as a major subdivision in the identifying heading, followed by a narrative statement of functions and powers related to an adequate description of forms and flow of paper required.

The informal method is easier reading, but probably more difficult to understand and follow precisely. The writer prefers the formal method as being more logical, bringing more emphasis on the basic functions and authorities, and contributing to standardization.

We now have an orderly approach to our purchasing procedure. If the information required is available, writing of the procedure is not difficult. The outline and suggestions on the specimen procedure herewith touch on the most important points.

*Promptness and flexibility
are essential to provide
proper service in this
procurement program*

Purchasing for Development and Production

By Robert G. Francis, Material Manager, Marquardt Aircraft Co., Van Nuys, California



Robert G. Francis, Materiel Manager at Marquardt Aircraft Co. (center), confers with Purchasing Agent Harley C. Lockhart (left) and Andrew A. Davis, supervisor of the outside production group.

THE purchasing department at Marquardt Aircraft Company has been organized to handle all of the many buying problems that are bound to crop up in a company undergoing a gradual transition from experimental to production work.

Most of our company's work in recent years has been devoted to the development of ramjet power plants for supersonic aircraft. Now, while much experimental work remains to be done, we are in the early stages of several production programs, involving ramjet engines, afterburners, and turbine driven

accessory drives. In view of current national defense requirements, these programs should grow both rapidly and indefinitely.

At this writing, we are issuing 1,200 purchase orders per month, for an average \$200,000 monthly expenditure. The purchasing staff consists of five raw material and purchased parts buyers, six outside production or subcontract buyers, one administrative assistant, and six clerical workers.

The number of buyers that we employ may seem to be fairly high in relation to the gross value of orders currently placed. That is characteristic of experimental activities, where variety rather than quantity marks our material requirements and a considerable proportion of new or special needs are involved. But it is not a number that will necessarily increase as our production programs gain momentum, since a buyer in our field frequently

expends about as much time and effort to buy "one only" of an item as he would to buy a production quantity with higher dollar value.

Virtually all of our buyers have been hired because of their extensive experience in the aircraft or some closely related industry, and not necessarily because of previous purchasing experience. We have found that a technical background or close familiarity with our products and their applications, coupled with a high degree of ingenuity and versatility, are the most important qualifications for the man who must purchase small quantities of a great variety of merchandise and services for experimental work.

Those buyers who have had the most technical training or extensive shop experience are usually assigned to outside production procurement, since they are best qualified to evaluate subcontractor facilities and technical capabilities, as well as to assist the subcontractor and our own engineering and manufacturing departments when problems arise.

A major factor contributing to the requirement for our purchasing staff is the fact that approximately 40% of the company's total personnel is represented by the two engineering divisions—accessories engineering and engine and afterburner engineering.

In experimental and prototype work, each engineer is a potential originator of a purchase order request or an inquiry about a product,

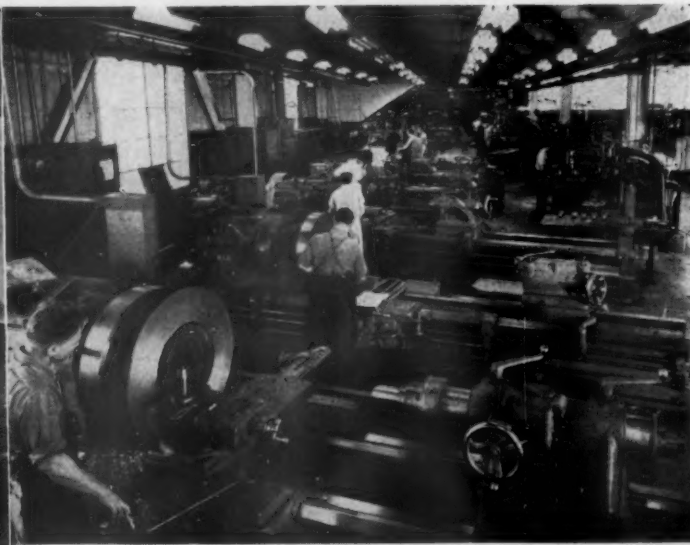
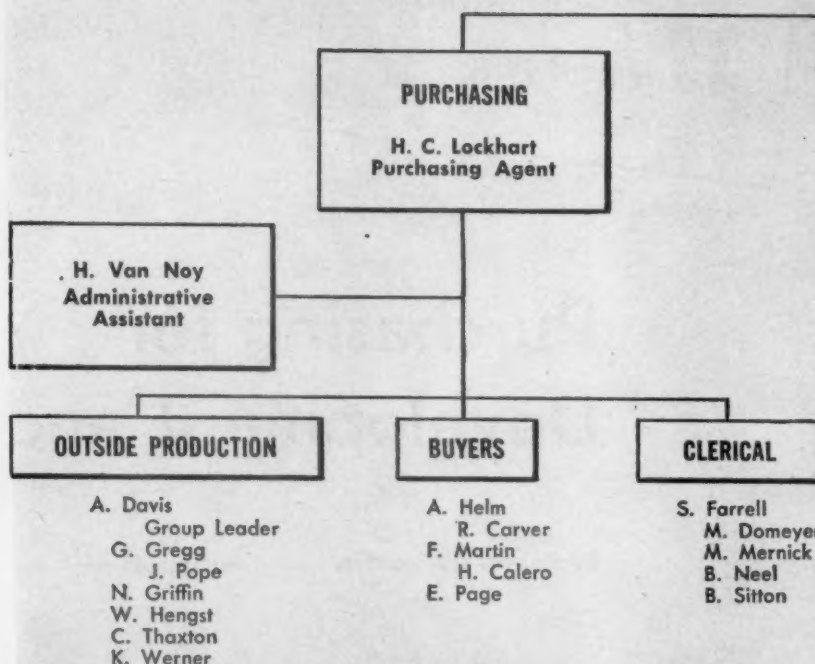
and these must be promptly and properly serviced. We have attempted to create a staff that can carry this load and provide effective service. Where new design concepts are continually being evolved, investigations concerning new materials,

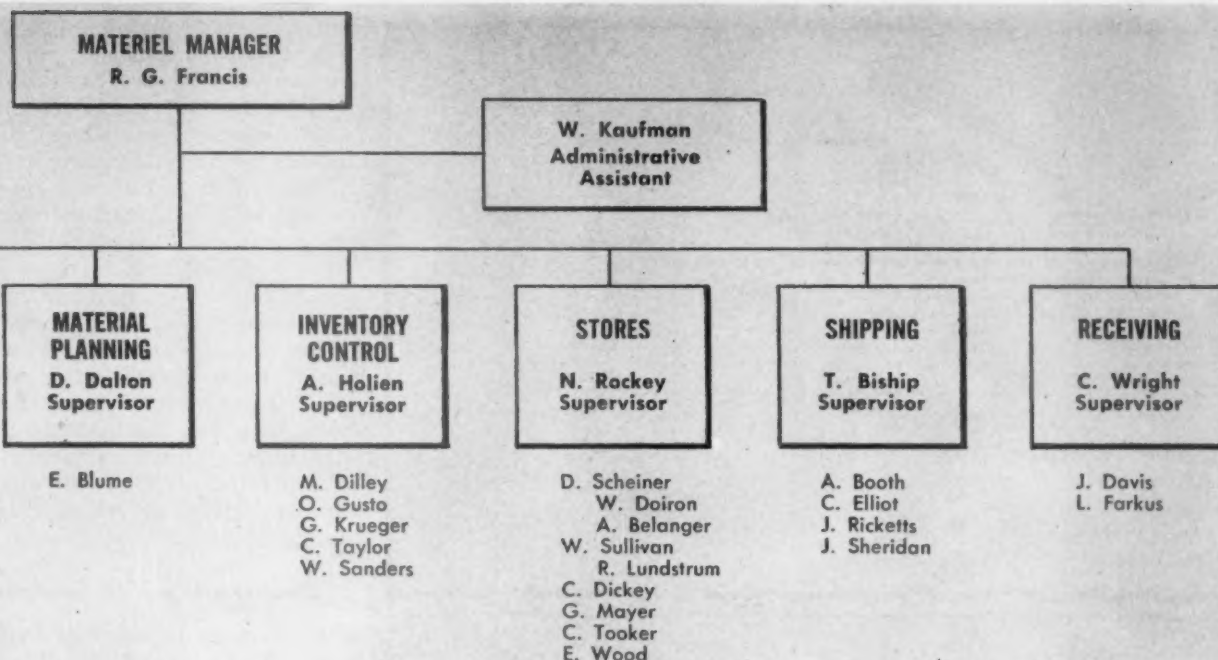
products, and methods make up a high percentage of purchasing's work load and require a high degree of versatility on the part of each buyer.

The Material Department has a material planning group, stationed

The many prototypes fabricated by Marquardt workers in new product development comprise materials and parts which must frequently be procured on short notice and in limited quantities.

The company's activities are gradually changing from a preponderance of experimental work to full scale production programs.





The Materiel Department has comprehensive responsibility.

in engineering, for the specific purpose of picking up and ordering material requirements as quickly as a design is reasonably well fixed. Despite this arrangement, and although alternate materials are frequently ordered to cover possible

design changes, procurement lead time still leaves something to be desired (but not always to be expected) in our work. Material requirements are frequently released to purchasing concurrently with release of prototype data to the

shop. Because this company has been continually developing new ideas, and because each prototype must be completed as soon as possible, much of our lead time problem is unavoidable.

Requisitions come to purchasing from our material planning group via inventory control and the shop tool crib, as well as from our plant and engineering departments. In order to facilitate the processing of requisitions, we make use of three different purchase request forms:

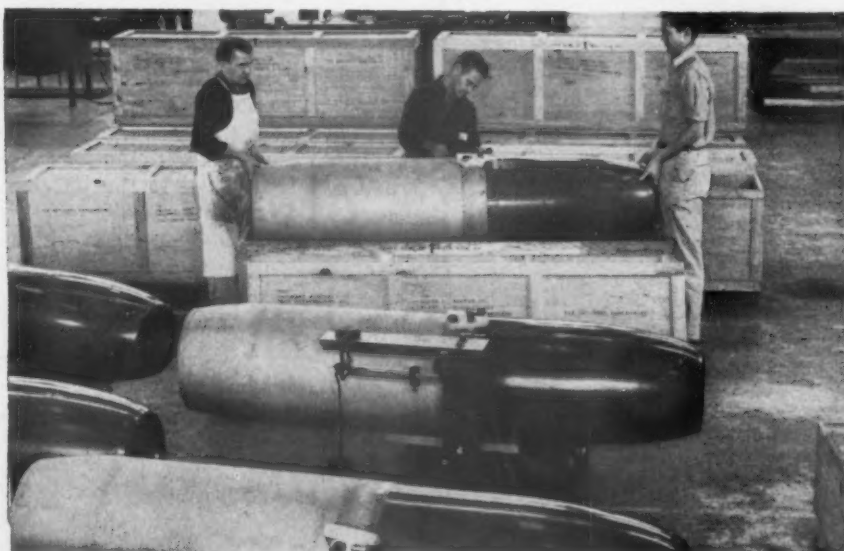
1. For "one shot" purchases—buys which most probably will not be duplicated.

2. For perishable or expendable materials, with recurring requirements. This is a "repeating" type requisition, being used over and over again as the need arises, and is returned to the originating department after each new order is filled. It has space for the listing of several vendors' names as approved sources for the item.

3. A special form for the procurement of castings and patterns.

Incoming requisitions go first to our Purchasing Agent, Harley C. Lockhart, who checks them and

Marquardt is a supplier to many of the major airplane manufacturers. These ramjet power plant units are being readied for shipment.



Many material requirements, in the early stages, are originated by a Purchase Inquiry from engineering or design personnel. The Quotation Request, using split carbons, enables the buyer to contact three sources with a single typing, and to recap the resulting bids directly on the working copy.

refers them to the appropriate buyers. Then, if necessary, and if time permits, the buyers obtain competitive bids.

We must of course keep government requirements in mind on competitive bids, which are required whenever it is anticipated that bidding will result in a net saving—after considering such things as the possibility of a standard market price, the cost of bidding, the time element, and our delivery requirement. Even though many off-the-shelf items carry a standard price, we make an effort to develop a minimum of three regular sources of supply for all items, thereby protecting vendor service and availability of stock.

Every week is "Be Kind to Salesmen Week" in Marquardt's purchasing department. Even when we have no apparent need for the things they want to sell, we find them a very valuable source of information and reference regarding the new products which we may have to buy a few days later. Frequently, too, they call our attention to products that are better suited to our application than items we had planned to buy.

On one occasion, the cooperation of a salesman representing a rivet manufacturer assisted us in convincing the management of his company that a particular change in pricing structure established an especially unfair and unnecessary price increase for aircraft company buyers, because many aircraft components had been designed around the rivet company's product. This manufacturer had originally been dependent largely on the aircraft industry for customers, but had recently been acquired by a firm operating predominantly outside the industry. Our persistence, and the salesman's ability to carry our message, was successful to the extent that the unfair pricing arrangement was corrected to the previous level. This benefitted not only Margardt, but the remainder of the aircraft industry as well.

Although we procure no major assemblies from outside manufacturers, we have many dealings with subcontractors, most of them being foundries and machine shops producing precision metal parts. Our policy in dealing with these subcontractors is to do everything possi-

In experimental and development work, use of alternative materials and deviations from the original requisition are frequently necessary. The buyer in this field has to be technically competent, versatile, ingenious, and flexible.

ble to help them earn reasonable profits as long as they make every possible effort to live up to their commitments.


Perhaps our own position and experience as a subcontractor to major aircraft building companies helps us in understanding the problems of subcontracting and how to deal with them most effectively.

Our buyers have special instructions not to put words in the vendors' mouths, so to speak, in obtaining competitive price quotations and delivery promises. Even though many suggestions might be offered to a supplier, quite within the bounds of good business ethics, we want each subcontractor to make promises on the basis of his own judgment and knowledge of what he is prepared to do, rather than because he feels that he may lose a contract if he fails to stretch the

| MATERIAL SUBSTITUTION REQUEST N° 1975 | | | | | |
|--|-------------|--|------------|--------------------------------|----------------|
| JOB NO. | ITEM | PO NO. | ORIGINATOR | DATE | REQUIRING SUB. |
| REQUESTED SUBSTITUTION | | | | | |
| IN PLACE OF | | | | | |
| <input type="checkbox"/> NOT IN MAC STOCK | | <input type="checkbox"/> NOT AVAILABLE IN VENDOR STOCK | | <input type="checkbox"/> OTHER | |
| <input type="checkbox"/> EQUIVALENT ITEM | | <input type="checkbox"/> NOT GENERALLY MFG. | | | |
| MODEL | EFFECTIVITY | WFS NO. | THRU | ENGINEER | DATE |
| KARDEN CHECK | | | | GROUP LEADER | |
| SUBSTITUTE MATL. IN STOCK YES <input type="checkbox"/> NO <input type="checkbox"/> | | | | STRESS | |
| CHANGE NO. OF MATL. IF IN STOCK | | | | MAY L. PLANNER | |
| CHECKED BY | | | | DATE | |
| REMARKS | | | | | |

| PURCHASING DEVIATION NOTICE N° 2192 | |
|--|---|
| TO | DATE |
| FROM | <input type="checkbox"/> FIRST NOTICE <input type="checkbox"/> CONFIRMING |
| REFER TO JOB # | REQ # ITEM # PO # ITEM # |
| FOR THE REASONS INDICATED BELOW, DEVIATION IN REFERENCED ITEM IS RECOMMENDED. ACTION TAKEN BY PURCHASING IS AS NOTED. NOTE: IF YOU DO NOT CONCUR WITH ACTION TAKEN OR DEVIATION, CANCELS REQUIREMENT. ADVISE PURCHASING IMMEDIATELY. | |
| PURCHASING ACTION: | REASON FOR DEVIATION: |
| <input type="checkbox"/> NO ACTION - SUSPENDED PENDING YOUR DISPOSITION | <input type="checkbox"/> NO SOURCE |
| <input type="checkbox"/> PROCEEDING WITH DEVIATION | <input type="checkbox"/> NO LOCAL SOURCE |
| <input type="checkbox"/> OTHER | <input type="checkbox"/> EQUIVALENT ITEM |
| | <input type="checkbox"/> MUST BE MANUFACTURED |
| DEVIATION: APPROVED BY | <input type="checkbox"/> VENDOR UNABLE TO MEET ORIGINAL PROMISE |
| <input type="checkbox"/> DELIVERY DATE REVISED TO | <input type="checkbox"/> INSUFFICIENT TIME ALLOWED FOR PROCUREMENT |
| <input type="checkbox"/> MATERIAL SUB MADE | <input type="checkbox"/> VENDOR HAD MATERIAL SHORTAGE |
| <input type="checkbox"/> OTHER | <input type="checkbox"/> VENDOR HAVING MANUFACTURING DIFFICULTIES |
| | <input type="checkbox"/> MATERIAL FAILED TO PASS VENDOR'S INSPECTION |
| | <input type="checkbox"/> OTHER |
| DISTRIBUTION | <input type="checkbox"/> ORIGINATOR <input type="checkbox"/> WFS PLANNING <input type="checkbox"/> PURCHASING |

| PURCHASE ORDER | | | | |
|--|---|-------------|------------|-----------|
|  | | | | |
| 14555 SATYDOW STREET VAN NUYS, CALIFORNIA Stanley 7-2811 State 5-8361 | | | | |
| VENDOR | P.O. # DATE ROUTING F.O.B. TERMS SHIP DATE REQUESTED PROMISED JOB # CONTRACT # A.M.O. # | | | |
| SALESMAN | <input type="checkbox"/> VERBAL QUOTE <input type="checkbox"/> CONFIRMING <input type="checkbox"/> WRITTEN QUOTE # <input type="checkbox"/> NON-CONFIRMING | | | |
| BUYER | CL # ID # | | | |
| ITEM | QUANTITY | DESCRIPTION | UNIT PRICE | EXTENSION |
| <input type="checkbox"/> TAXABLE <input type="checkbox"/> NON-TAXABLE RESALE TAX PERMIT NO. AG-43918 | | | | |
| SHIPPING AND BILLING: 1. Invoice in duplicate. 2. Packing slips and manifests. 3. Certification: Materials ordered to a Government specification shall be accompanied by a notation indicating the source of the materials, and the source of the materials shall be certified as follows: "I certify that the above bill is correct and true, that payment therefor has not been received, that all necessary requirements as to American production and labor standards, and all conditions of purchase applicable to the transactions have been complied with, and that state or local sales taxes are not included in the amounts billed." 4. Cash: Unless otherwise noted, cash for shipment or prepayment for shipment are included in price. Buyer will reimburse for his shipment obligations when proposed by Seller. If price is limited on the order, Seller agrees to charge the lowest prevailing market price. | | | | |
| INSTRUCTIONS AND CONDITIONS ON THE REVERSE SIDE ARE MADE A PART OF THIS ORDER TO WHICH SELLER AGREES BY ACCEPTANCE OF THIS ORDER. PURCHASING AGENT | | | | |

| PURCHASE ORDER | | | | |
|--|---|-------------|------------|-----------|
|  | | | | |
| 14555 SATYDOW STREET VAN NUYS, CALIFORNIA Stanley 7-2811 State 5-8361 | | | | |
| VENDOR | P.O. # DATE ROUTING F.O.B. TERMS SHIP DATE REQUESTED PROMISED JOB # CONTRACT # A.M.O. # | | | |
| SALESMAN | <input type="checkbox"/> VERBAL QUOTE <input type="checkbox"/> CONFIRMING <input type="checkbox"/> WRITTEN QUOTE # <input type="checkbox"/> NON-CONFIRMING | | | |
| BUYER | CL # ID # | | | |
| ITEM | QUANTITY | DESCRIPTION | UNIT PRICE | EXTENSION |
| <input type="checkbox"/> TAXABLE <input type="checkbox"/> NON-TAXABLE RESALE TAX PERMIT NO. AG-43918 | | | | |
| EXCEPT AS NOTED HEREIN, THIS CHANGE ORDER IS SUPPLEMENTARY ONLY TO THE ORIGINAL PURCHASE ORDER AND ALL INSTRUCTIONS AS WELL AS PRINTED CONDITIONS OF THE ORIGINAL ORDER APPLY. | | | | |
| IF ACKNOWLEDGMENT COPY ATTACHED, PLEASE SIGN & RETURN | | | | |
| PURCHASING AGENT | | | | |

The Purchase Order is a 10-part form, with copies for:

Vendor
Acknowledgement
Purchasing
Accounts Payable
Cost Accounting

Receiving
Inspection
Government Audit
Originator
Reference

Copies for internal use are distinctively colored to facilitate distribution and processing. Order revisions follow the same distribution, but are distinguished by being printed on pink stock and have the words "Change Order" prominently shown on the body of the form.

[illegible]

The effectiveness of our policy in dealing with subcontractors is indicated by the fact that our shortages have rarely exceeded 10%, despite the fact that each month we have had to purchase as many as 300 unusual items for the first time.

Outsiders tell us that the coordination of our engineering and purchasing activities is unusually good.

In good teamwork, that works both ways, and engineering must have a realization that purchasing has its problems too. One of our most persistent problems right now is the engineer who specifies a certain product without permitting alternatives or justifying his choice. It is our hope that this problem can be solved, or at least minimized, by continuing education of the engineer in purchasing's goals and responsibilities, and by continually improving our service to the engineer.

GNISAHCRUP TNEGA

By Edward A. Hageny



EDWARD A. HAGENY is Purchasing Agent of The Wm. Powell Company, Cincinnati, Ohio, and is active in the affairs of The Cincinnati Association of Purchasing Agents. He is a past president of the Queen City Toastmasters Club, and is a frequent speaker at business and service club meetings in that area. His comments on the topic "If I Were A Salesman" were published in a recent issue of "Credit and Financial Management Magazine."

MISCONCEPTIONS distort our views on many subjects, sometimes bring morbid fears into our lives. We have all experienced the horror of arriving at the dentist's office, having steeled ourselves for the visit, and reading the name "I. Pullem" on the door—or, having made up our mind to ask for a raise, we see "Big Shot President" inscribed on the Top Brass office. We conjure up all sorts of terrors to be encountered within, and our will power deserts us.

But this is as nothing compared to the way the blood will drain out of the neophyte salesman the first time he stands before the door of Bill Sourpuss, Purchasing Agent. All the wild tales he has heard about the breed flash through his memory, and he fills out the picture with further imaginings of his own, all in the most lurid colors. Here, perhaps, is the way he imagines it will be.

An Imaginary Interview

The receptionist has announced him; there's no turning back now. The door is opened by a tired, overworked secretary, who meekly calls, "Come in." Upon entering the lion's den, he observes a thick-necked individual seated at a messy desk, smoking a black cigar and thumbing through the racing form, entirely oblivious of his presence. A few minutes later the super thinker turns and bellows, "Well, what do you want?"

The salesman meekly explains that he represents the ZXY Cutting

Tool Company and that he is very anxious to count the P. A. as one of his customers. Bullneck suddenly turns very friendly as he shuffles through a sheaf of papers, extracts one and, tendering it to the salesman, he explains, "Well, pal, you are in luck. It just happens that I have here an order for 500 milling cutters."

The grateful salesman reaches for the order, only to feel a calloused hand clamp down heavily on his as he hears, "Not so fast, pal. First, what's your price?"

This calls for bringing the catalog out of the brief case, and after some nervous shifting of papers he locates the item and happily states a price of \$4.50 each, less 10% in lots of 1000. Bullneck now really comes into his own. He snarls that the discount on this order, to him, and in lots of 500, is 35%.

The salesman now does some quick mental arithmetic. If I sacrifice my 10% commission on this order—in fact, if I just forget my salary for the entire week—my company should be willing to lose 15% to get this firm on the order books. So, nodding his acceptance, he reaches again for the order. But Bullneck isn't finished yet. "And another thing," he adds, "don't forget that there's a 10% kickback for the Home for Shattered Purchasing Agents. Also, put me down on your Christmas gift list for a case of bonded liquor."

A very frustrated and beaten man now meekly turns to leave the office. Behind him he hears derisive laugh-

ter and a boisterous voice saying, "Another sucker!" And as he leaves, he sees the cryptic lettering on the inside of the glass in the office door:

GNISAHCRUP TNEGA

That, in case you haven't noticed, is "purchasing agent" spelled backwards.

A Job To Do

Unfortunately, a great many people hold an opinion of purchasing agents that roughly coincides with the incident just portrayed in this purely fictitious sketch. Without the basis of fact to guide them, they have taken the diametrically wrong viewpoint. What they imagine is *gnisahcrup tneg*, which is "purchasing agent" exactly in reverse.

Purchasing agents are no different than any other nice people trying to do a job, in spite of what salesmen who have failed to receive orders say about them. Part of their job, which makes it harder than

some others, is to say "No" more often than they can say "Yes".

Almost without exception, they are very zealous about their work. Like a famous backwards-spelled remedy that starts things moving, a part of the purchasing job is to keep things moving, so that the business can keep moving.

Price is the last thing the purchasing agent is interested in. It has to be that way, in simple chronology. His first concern is to secure material suited to the need, from a supplier who will deliver it when needed.

At the same time, it is his concern to negotiate a price that will be fair to his own company, yet will enable his supplier to make a fair profit. You see, he wants to have that supplier still in business, and in a friendly mood, the next time he has an order to place. Also, he does not forget that the supplier also has a purchasing agent and may be interviewing salesmen from his own firm, and to get along it's a case of treating others as you would have them treat you.

This is elementary, but it is surprising how few people have ever thought it through. One of the peculiarities of the purchasing agent's

lot is this: Should he find himself in a social gathering at some friends' home or at a vacation resort, introductions will usually reveal some that are salesmen. They are promptly accepted with delight for their personality and hailed with expectancy as reciters of good yarns. But when our friend announces that he is a purchasing agent, a hush settles over the gathering and he becomes the recipient of bemused stares. But he can always be sure of one thing. Before he departs, one of the guests will skillfully maneuver him into a corner and ask, in an undertone, what discount he could obtain on a refrigerator, or a set of tires.

Even the sanctity of his home is not always a refuge. He tries to relax after a hard day of fighting for hard-to-get materials and fighting off salesmen trying to load him up with superfluous products for which he has no earthly use. His aching brain just about clears when friend wife sidles up, puts her arms around him, and says, "Honey, that nice Mrs. Schmaltz—she's the president of our Garden Club—told me today that her husband is in the disinfectant business and would appreciate it if you would send him an order for some of his stuff.

At all times, the purchasing agent must lead a very circumspect life. If he dines out with a friend, the neighbors take it for granted that the friend is a salesman who is picking up the tab. If he should appear some evening driving a shiny new car, they immediately ask who made the donation. If, on the contrary, he drives a shabby, antiquated buggy, the tongue waggers have an answer for that too. "Look at old Scrooge," they whisper. "He has squeezed all the profit out of the orders he has placed, and the firms he does business with ignore him."

It is true that around Christmas time he is the recipient of a few cigars, billfolds, neckties, and fancy advertising gadgets, and he accepts them with a tremulous heart. It is the fear of offending a masterful salesman that prevents him from returning them.

Advice to purchasing agents: They should try to win the good will of their fellow men by wearing a perpetual smile, being kind to their children and the neighbor's dog, and hope eventually to dispel the misconception and stigma that goes with *gnisahcrup tneg*a so that some day they will be welcomed into respectable society as Mr. P. A.

Thoughts in a Reception Room

The following comment is found in the unique reception booklet "Welcome to Rogers", which is handed to business visitors at the Rogers Corporation plants in Rogers and Manchester, Conn. The silhouette "fable without words" is from the same source.

WE have cooled our heels and polished our pants in enough reception rooms to have an idea of how other people feel about it. Here at Rogers we respect a visitor's time and his need to utilize it on a planned basis.

"I'm sorry, he's out," sometimes makes us wonder if "he" is out on his feet, or what. When Rogers people are out, they're out for business, and that's why many people visit Rogers. They want business from us. So we take pains to avoid giving

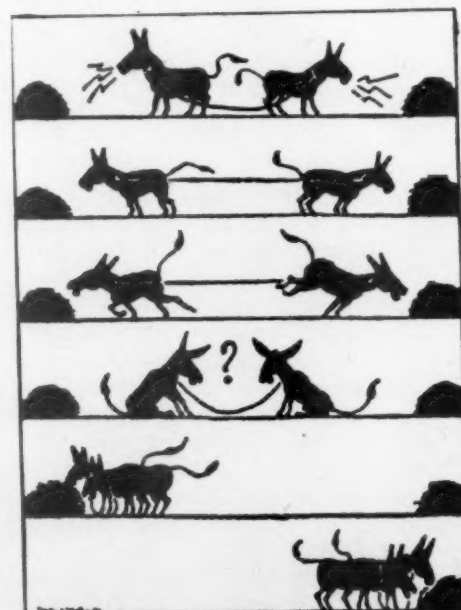
them the impression that we're out of business.

Our purchasing people have been trained in modern purchasing techniques, which make purchasing men really important parts of a company and not mere procurers. After all, they're the only ones able to bankrupt a company all by themselves.

The good purchasing man today knows enough about his company to be able to recognize the answers to its needs. He also knows enough about the company's people to grasp an opportunity to call in the right man to hear a salesman's story. He doesn't seek credit for how many salesmen he "protected" people from; he gets credit for the number of new ideas he introduces.

At Rogers, if a man announces that he's spent the whole day with salesmen, he's likely to be asked, "Were they good salesmen?" If his answer is affirmative, then our word to him is, "Congratulations! You must have learned plenty today!"

We appreciate good purchasing men when we're out in the field, and we appreciate good salesmen when we're back home.



The Pulse of Business

OCTOBER, 1954

PURCHASING'S

Summary of economic conditions

Within a couple of months you may see a rise in the adjusted industrial production index. Look for a rise of a point or two. The current figure is at 124% of the 1947-49 average - and has been for four straight months.

Tremendous consumer purchasing power will contribute to the recovery. Personal income for the first seven months of 1954 was higher than the corresponding period in 1953. Individuals are now saving more than they were last year. Currently, they're salting away some \$20 billion annually to pay for future purchases.

Auto plants, many of which are shut down for model changeovers, will soon be back in full scale operation on 1955 models. Steel production is showing signs of picking up after the summer slump. Current operations are at more than 66% of capacity - a slight increase over previous weeks. With the help of the stockpiling program, mining activity should gain after the present wave of strikes is ended.

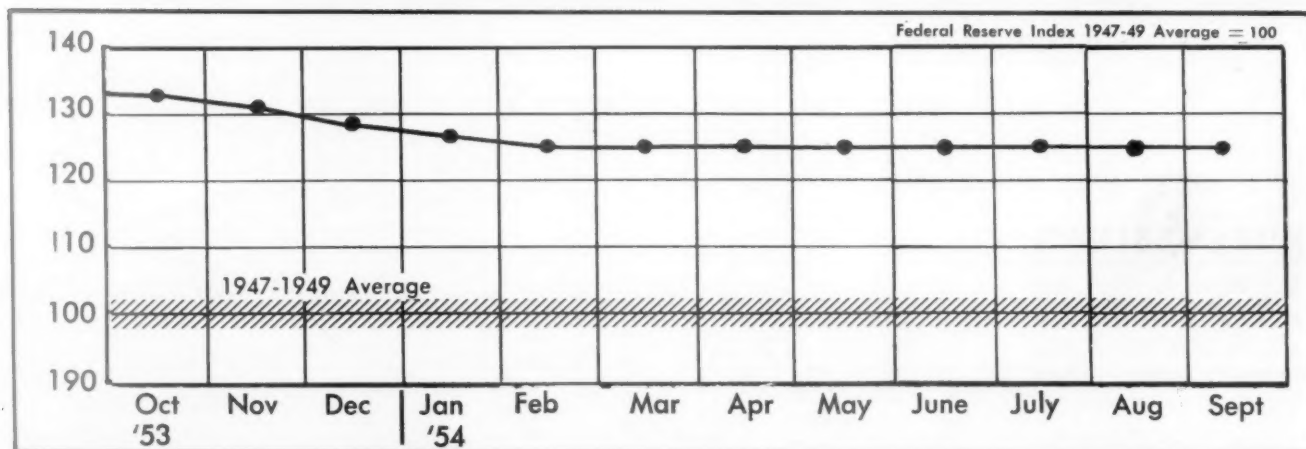
The estimated \$2.1 billion cash deficit in the federal budget for the coming fiscal year will pump "new" money into the economy. During the previous year, government fiscal operations were slightly deflationary. Although there was a budgetary deficit, an actual cash surplus of \$115 million was accumulated.

Recovery will get another boost from continued heavy borrowing by state and local governments. The money will be used to build schools, roads and other public works. Such spending has the same economic effect as federal "pump priming." Combined public and private debt is more than \$550 billion and is still growing.

Major block to sharper recovery is continued inventory liquidation. Latest monthly figures show a cut of about \$800 million, and reductions probably will continue. Even though inventories have been brought down to much sounder levels, they are still out of balance in relation to sales. That ratio is higher today than it was a year ago.

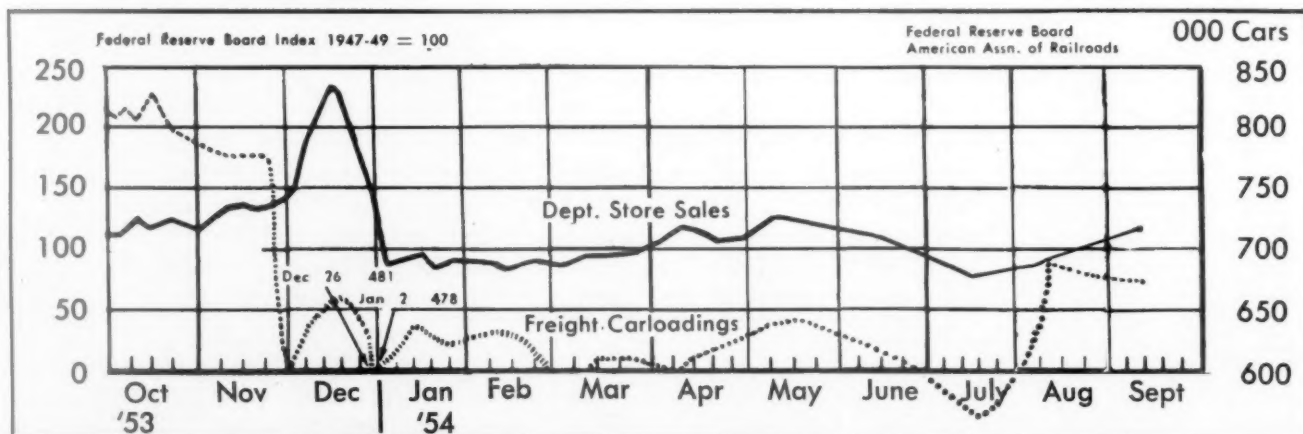
THE PULSE OF BUSINESS

PRODUCTION



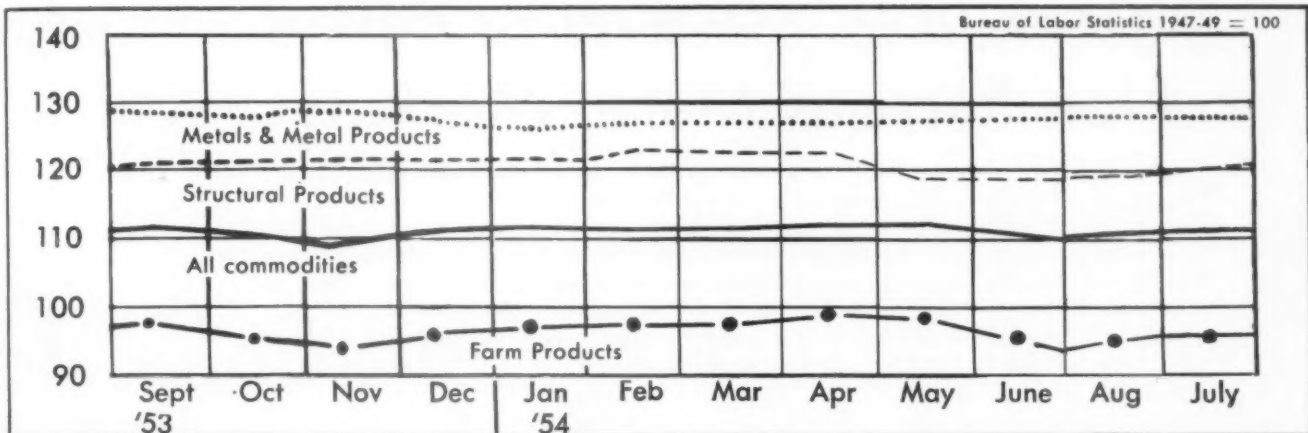
| | BASE | LATEST | MONTH AGO | YEAR AGO | % OF CHANGE IN MONTH | % OF CHANGE IN YEAR |
|---|--------------|--------|-----------|----------|----------------------|---------------------|
| Industrial Production Index | 1947-49=100 | 124 | 124 | 136 | 0 | - 8.9 |
| Steel Production (Weekly) | 000 net tons | 1,500 | 1,519 | 2,011 | - 1.3 | -26.4 |
| Electric Power Production (Weekly) | mil KWH | 9,087 | 9,059 | 8,694 | + 0.3 | + 4.5 |
| Bituminous Coal Production (Weekly) | 000 net tons | 7,650 | 7,500 | 9,593 | + 2.0 | -20.2 |
| Auto, Truck & Bus Output (Weekly) | units | 82,477 | 115,504 | 116,760 | -28.6 | -29.4 |
| Petroleum Output (Daily Average) | 000 bbls. | 6,111 | 6,153 | 6,534 | - 0.7 | - 6.5 |

TRADE



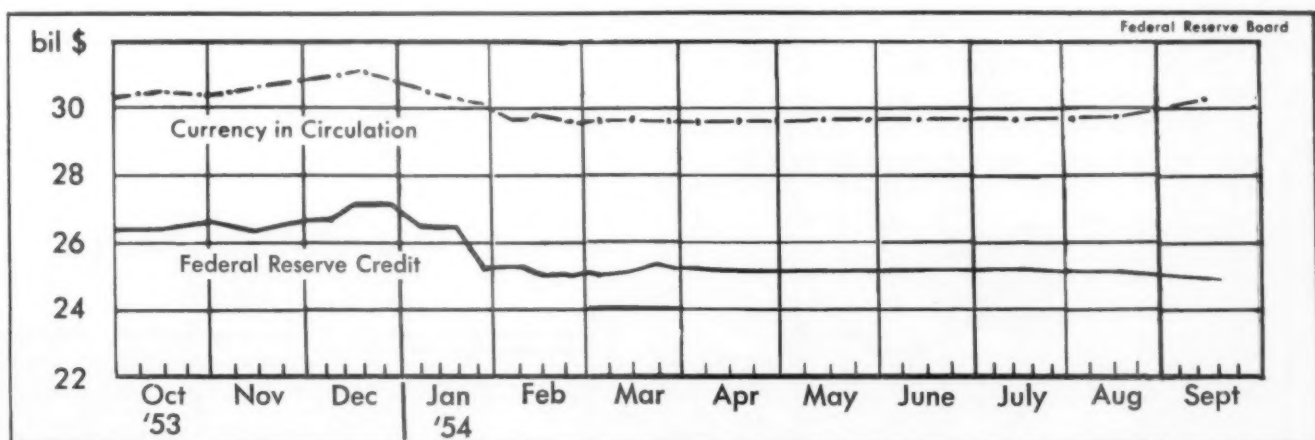
| | BASE | LATEST | MONTH AGO | YEAR AGO | % OF CHANGE IN MONTH | % OF CHANGE IN YEAR |
|---|-------------|---------|-----------|----------|----------------------|---------------------|
| Dept. Stores Sales Index (Fed. Res.) | 1947-49=100 | 114 | 92 | 101 | +23.9 | +12.9 |
| Commercial Failures (Dun & Bradstreet) | no. | 184 | 207 | 182 | -11.1 | + 1.0 |
| Freight Carloadings | cars | 676,616 | 683,569 | 799,079 | - 1.1 | -15.4 |
| Miscellaneous Carloadings | cars | 338,615 | 335,608 | 383,518 | + 0.8 | -11.7 |

PRICES



| | BASE | LATEST | MONTH AGO | YEAR AGO | % OF CHANGE IN MONTH | % OF CHANGE IN YEAR |
|---|-------------|---------------------------------|---------------------------------|---------------------------------|----------------------|---------------------|
| All Commodities (BLS) | 1947-49=100 | 110.5 | 110.4 | 110.6 | + 0.1 | - 0.1 |
| Farm Products | 1947-49=100 | 95.7 | 96.2 | 96.3 | - 0.6 | - 0.7 |
| Metals & Metal Products | 1947-49=100 | 128.6 | 128.0 | 129.3 | + 0.5 | - 0.6 |
| Structural Products | 1947-49=100 | 120.5 | 120.0 | 119.6 | + 0.4 | + 0.7 |
| Steel Billets (Pittsburgh) | net ton | \$64.00 | \$64.00 | \$62.00 | 0 | + 3.2 |
| Steel Scrap, heavy melting, Pitts | net ton | 30.50 | 30.00 | 40.50 | + 1.7 | -24.7 |
| Copper, electrolytic | lb. | .30 | .30 | .30 | 0 | 0 |
| Rubber (rib-smoked sheets) | lb. | .24 ³ / ₈ | .23 ¹ / ₄ | .23 ³ / ₈ | + 4.8 | + 4.3 |

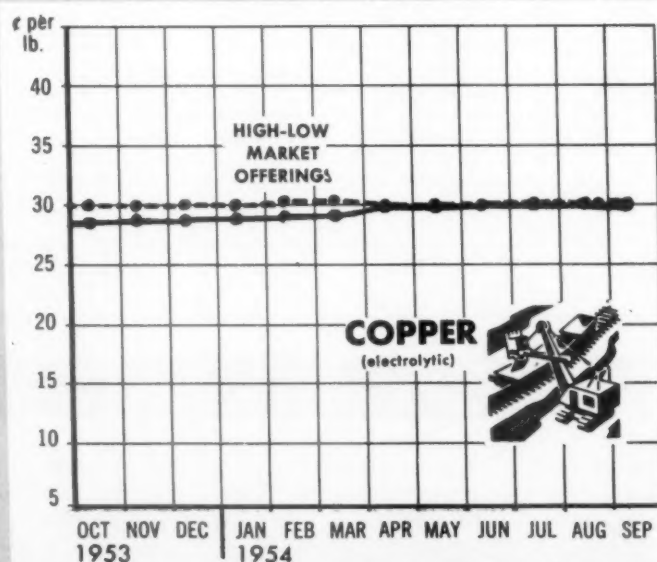
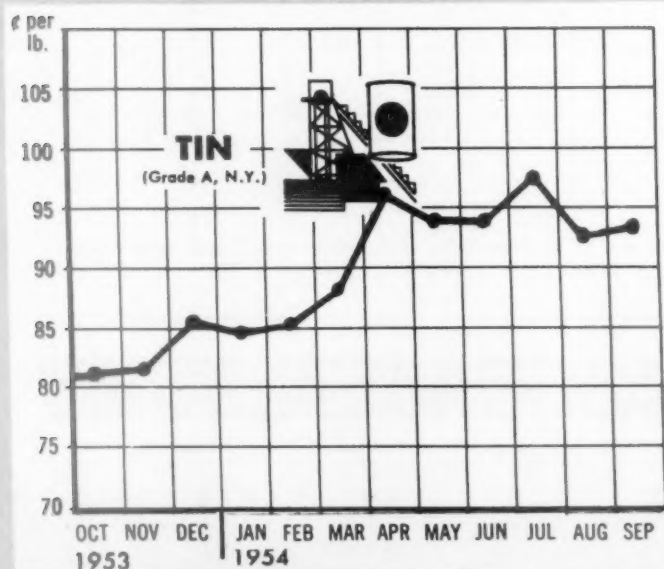
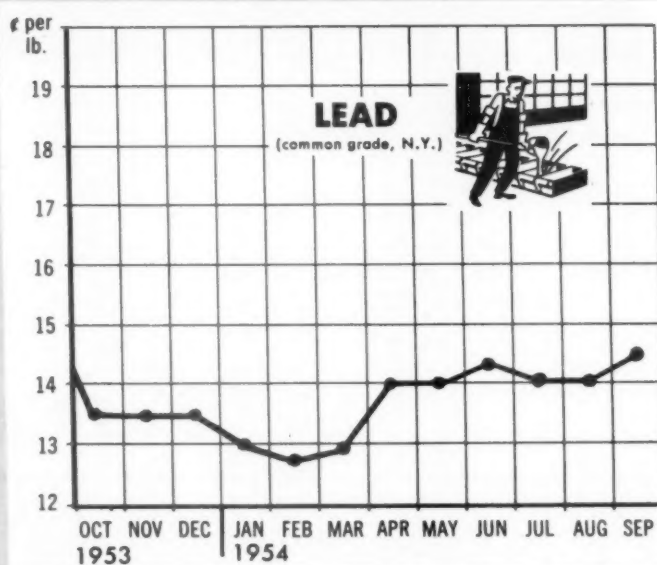
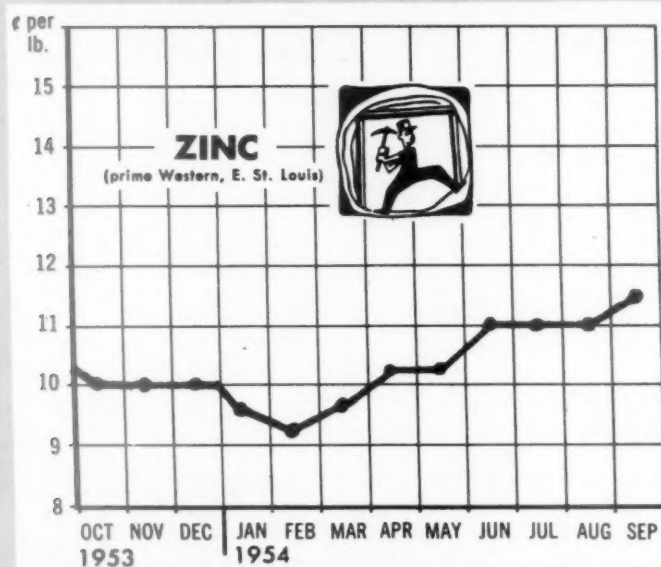
FINANCE

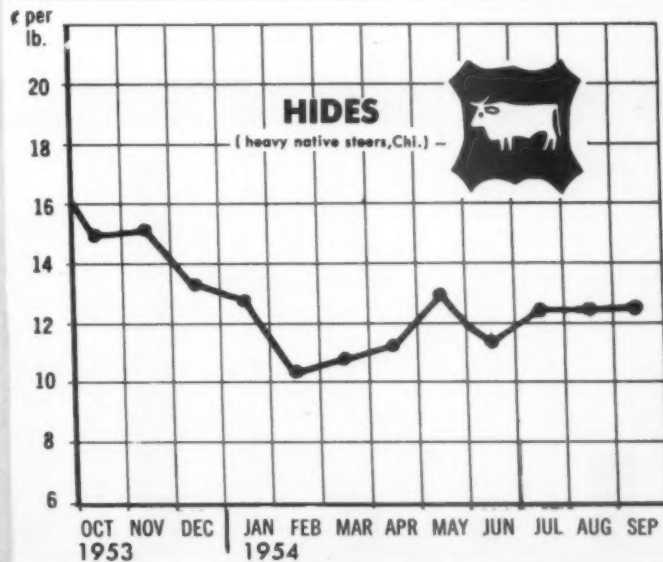
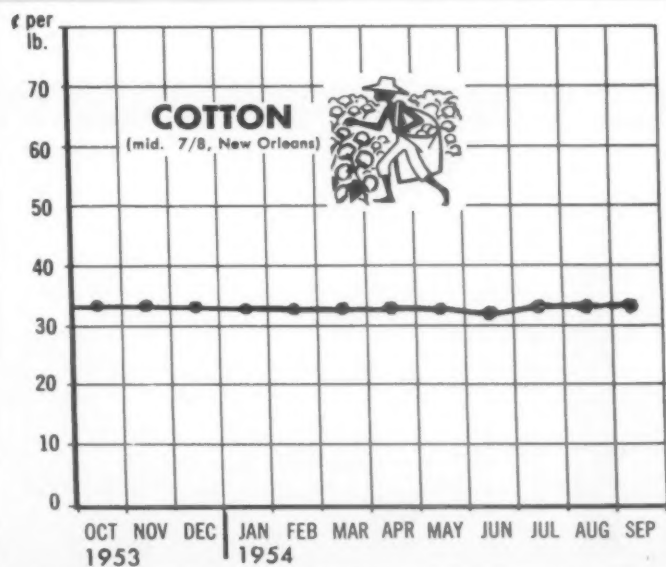
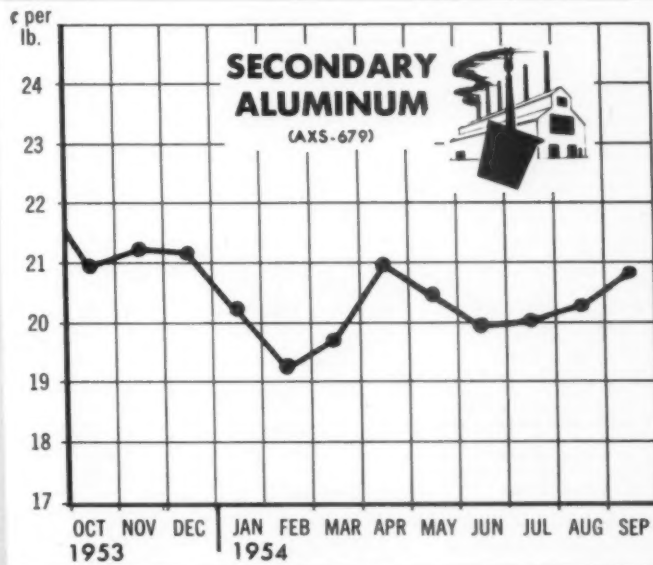
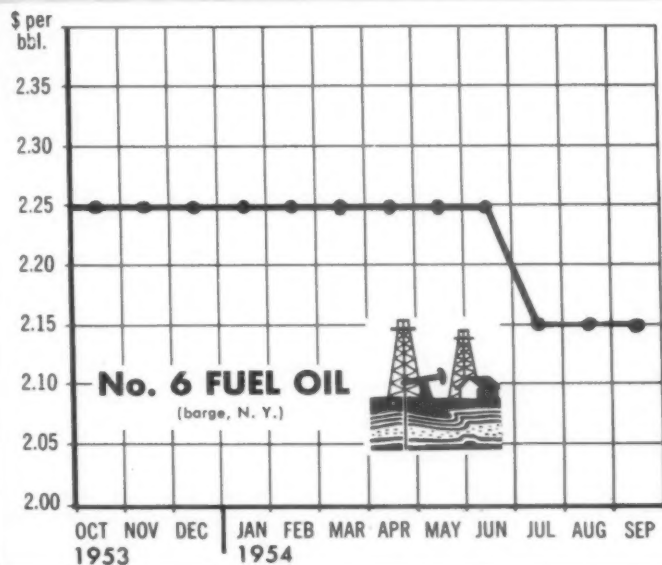
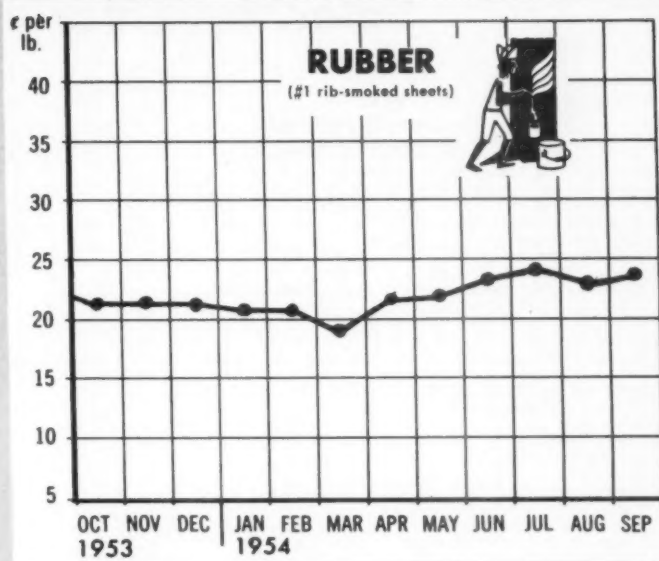
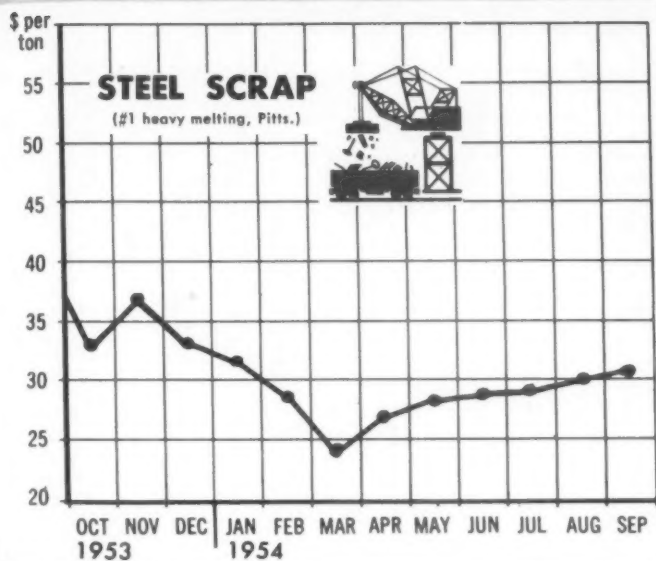


| | BASE | LATEST | MONTH AGO | YEAR AGO | % OF CHANGE IN MONTH | % OF CHANGE IN YEAR |
|--|----------|--------|-----------|----------|----------------------|---------------------|
| Stock Prices (Standard & Poor's) | 1926=100 | 244.0 | 244.3 | 187.8 | - 0.1 | +29.9 |
| Bank Clearings (New York) | mil \$ | 6,852 | 9,413 | 6,678 | -27.2 | + 2.6 |
| Federal Reserve Credit | mil \$ | 24,705 | 25,066 | 26,179 | - 1.4 | - 5.6 |
| Currency in Circulation | mil \$ | 30.115 | 29,911 | 30,479 | + 0.7 | - 1.2 |

Strikes and Stockpiling Affect Non Ferrous Metal Markets

Copper supplies are tightening up as a result of strikes at domestic and Chilean mines. Longer term outlook is for continued price stability and ready availability. Price increases in lead and zinc are result of stockpiling activity, not increased consumption. Government plans to buy 200,000 tons of lead and 300,000 tons of zinc during current fiscal year. Though spot prices are reasonably stable, cotton futures are up because of poor crop. Huge government stocks will prevent major price rise. Quicksilver's mercurial rise from \$183 to \$305 per flask puzzles market observers. Apparently, world supply is being gobbled up for some secret defense use.





THE PULSE OF BUSINESS

Sales, Inventories and New Orders

Value of Manufacturers' Sales
Seasonally Adjusted
(Millions of Dollars)

| | |
|--|--------|
| All Manufacturing industries | 26,366 |
| Durable goods industries | 13,410 |
| Primary metals | 2,335 |
| Fabricated metals | 1,309 |
| Electrical machinery | 1,462 |
| Machinery (except electrical) | 2,125 |
| Motor vehicles & equipment | 2,381 |
| Transportation equipment (exc. motor vehicles) | 1,032 |
| Furniture and fixtures | 334 |
| Lumber products (exc. furniture) | 815 |
| Stone, clay and glass products | 611 |
| Professional, scientific instruments | 416 |
| Other industries, incl. ordnance | 590 |
| Nondurable goods industries | 12,956 |
| Food and kindred products | 3,796 |
| Beverages | 570 |
| Tobacco products | 301 |
| Textile-mill products | 1,181 |
| Apparel | 869 |
| Leather and products | 328 |
| Paper and allied products | 766 |
| Printing and publishing | 740 |
| Chemicals and allied products | 1,720 |
| Petroleum and coal products | 2,237 |
| Rubber products | 448 |

Book value of Manufacturers' Inventories
Seasonally Adjusted
(Millions of Dollars)

| | |
|--|--------|
| All Manufacturing industries | 46,485 |
| Durable goods industries | 26,392 |
| Primary metals | 3,382 |
| Fabricated metals | 2,815 |
| Electrical Machinery | 3,366 |
| Machinery (exc. electrical) | 5,628 |
| Motor vehicles & equipment | 3,435 |
| Transportation equipment (exc. motor vehicles) | 2,707 |
| Furniture and fixtures | 697 |
| Lumber products (exc. furniture) | 1,068 |
| Stone, clay and glass products | 879 |
| Professional, scientific instruments | 866 |
| Other industries, incl. ordnance | 1,549 |
| Nondurable goods industries | 20,093 |
| Food and kindred products | 3,433 |
| Beverages | 1,242 |
| Tobacco products | 1,804 |
| Textile-mill products | 2,666 |
| Apparel | 1,866 |
| Leather and products | 568 |
| Paper and allied products | 1,030 |
| Printing and publishing | 755 |
| Chemicals and allied products | 3,108 |
| Petroleum and coal products | 2,696 |
| Rubber products | 925 |

Manufacturers' New Orders (Adjusted)

| | |
|------------------------------|--------|
| All Manufacturing industries | 24,525 |
| Durable goods industries | 11,600 |
| Nondurable goods industries | 12,925 |

| 1953 | 1954 | | | | |
|--------|--------|--------|---------|----------|----------|
| July | Mar. | Apr. | May (r) | June (p) | July (p) |
| 26,366 | 24,064 | 24,418 | 23,978 | 24,176 | 24,213 |
| 13,410 | 11,385 | 11,502 | 11,344 | 11,318 | 11,456 |
| 2,335 | 1,528 | 1,575 | 1,505 | 1,558 | 1,544 |
| 1,309 | 1,173 | 1,223 | 1,156 | 1,181 | 1,192 |
| 1,462 | 1,355 | 1,305 | 1,291 | 1,309 | 1,329 |
| 2,125 | 1,941 | 1,939 | 1,862 | 1,860 | 1,928 |
| 2,381 | 1,981 | 2,052 | 2,083 | 1,960 | 1,813 |
| 1,032 | 931 | 971 | 940 | 928 | 1,146 |
| 334 | 317 | 300 | 317 | 336 | 307 |
| 815 | 688 | 693 | 680 | 676 | 681 |
| 611 | 569 | 547 | 601 | 603 | 600 |
| 416 | 353 | 356 | 354 | 347 | 375 |
| 590 | 549 | 541 | 555 | 560 | 541 |
| 12,956 | 12,679 | 12,916 | 12,634 | 12,858 | 12,757 |
| 3,796 | 3,802 | 3,977 | 3,827 | 3,871 | 3,816 |
| 570 | 628 | 677 | 672 | 617 | 715 |
| 301 | 309 | 305 | 304 | 297 | 300 |
| 1,181 | 1,060 | 1,073 | 1,115 | 1,072 | 1,040 |
| 869 | 806 | 866 | 826 | 798 | 933 |
| 328 | 290 | 278 | 297 | 339 | 367 |
| 766 | 730 | 733 | 714 | 775 | 753 |
| 740 | 776 | 750 | 769 | 812 | 734 |
| 1,720 | 1,692 | 1,720 | 1,664 | 1,722 | 1,627 |
| 2,237 | 2,198 | 2,162 | 2,089 | 2,198 | 2,105 |
| 448 | 388 | 375 | 357 | n.a. | n.a. |

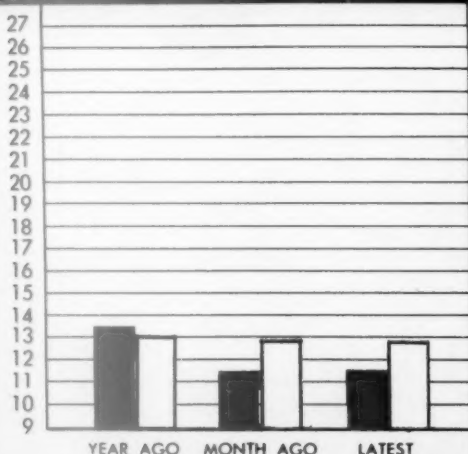
p—preliminary

r—revised

n.a.—not available

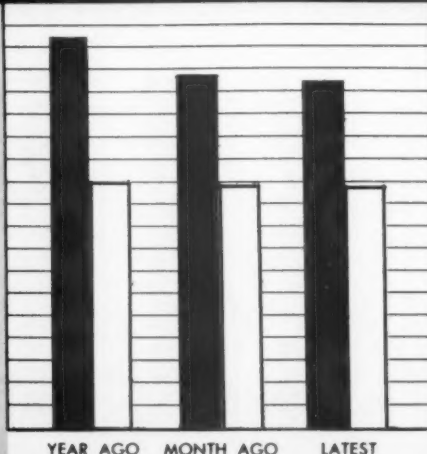
BILLIONS
OF \$

SALES

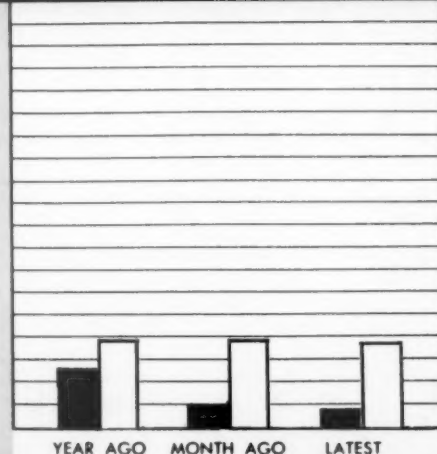


DURABLE GOODS

INVENTORIES



NEW ORDERS

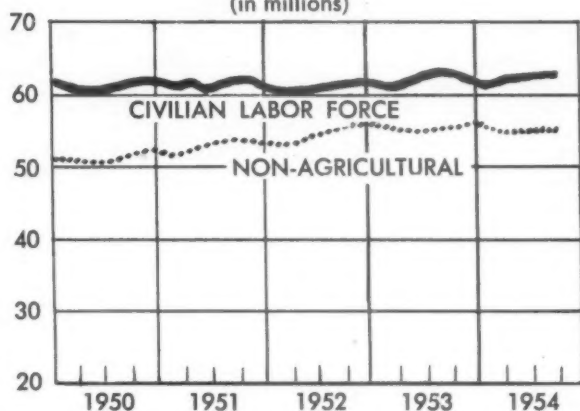


NON-DURABLE GOODS

BILLIONS
OF \$

EMPLOYMENT

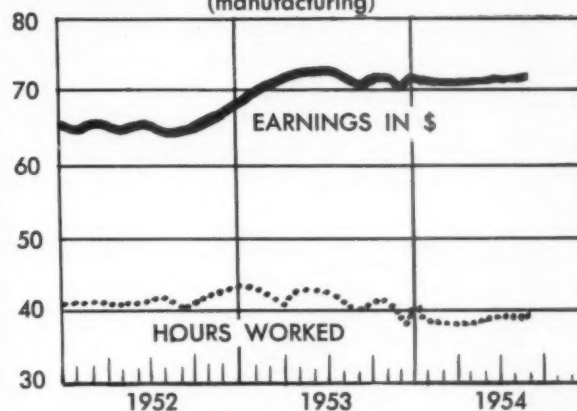
(in millions)



Source: Bureau of the Census

AVERAGE WEEKLY EARNINGS, HOURS

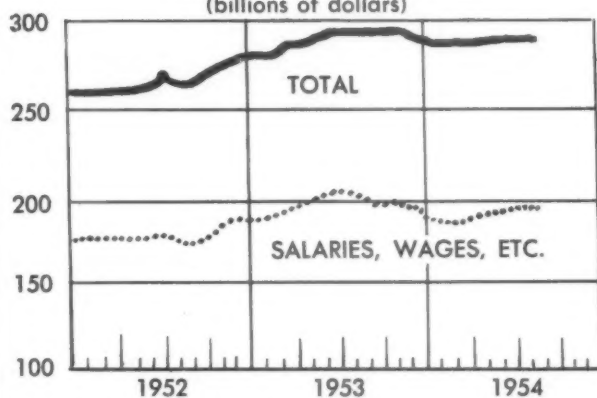
(manufacturing)



Source: Department of Labor

PERSONAL INCOME

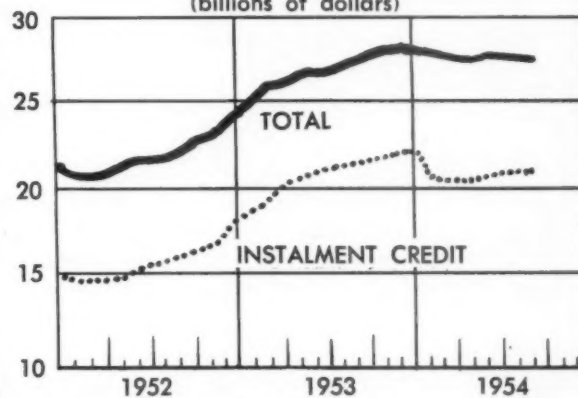
(billions of dollars)



Source: Department of Commerce

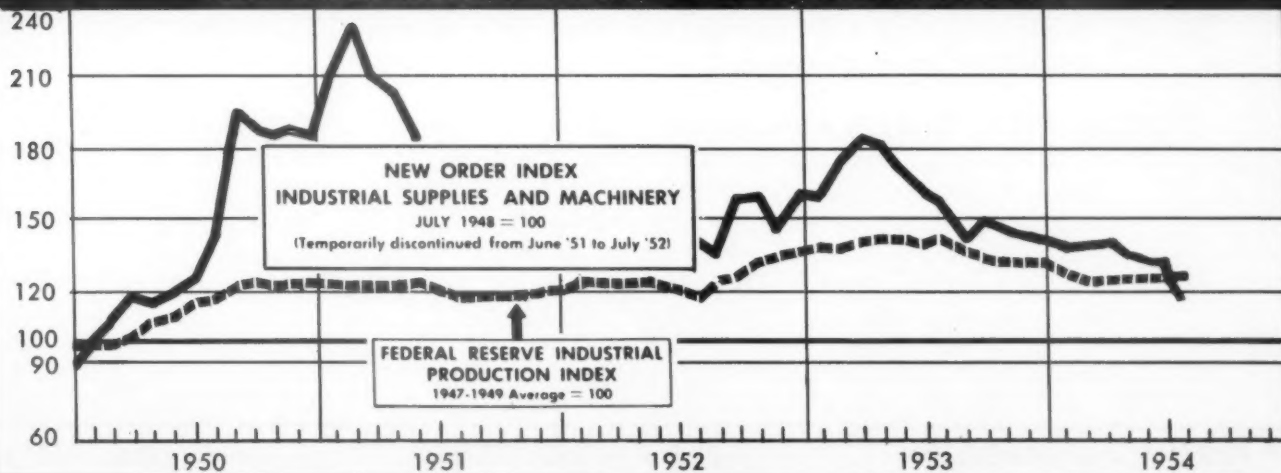
CONSUMER CREDIT

(billions of dollars)



Source: Federal Reserve Board

NEW ORDER INDEX INDUSTRIAL SUPPLIES AND MACHINERY



Source: American Supply & Machinery Manufacturers' Association

Straws in the Trade Wind

EASIER SELLING AHEAD? - Sales executives think it will be easier to book orders this fall than at any time during the year. Replying to a Journal of Commerce questionnaire, they said "new" techniques will be used to break down sales resistance. Among these are: switching from price emphasis to the quality story; new products; more sales training; bigger advertising budgets.

DO IT YOURSELF - Many manufacturers are looking at "make or buy" in a new light now that sales are falling off. More and more plants are doing their own tool and die work instead of farming it out. Parts makers in the auto and appliance industries are feeling the effects of this trend to make a needed item rather than buy it. There are reports that some metal working companies are even designing and building their own machine tools.

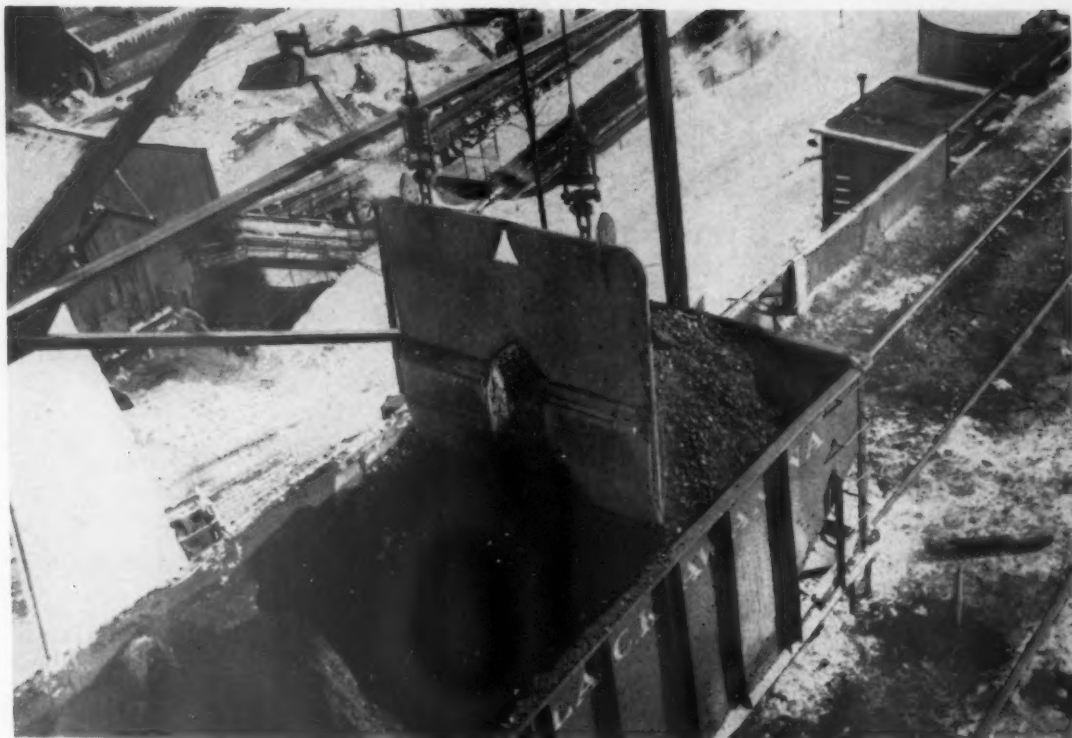
SLITTING COSTS - At least two big mills have started delivering steel sheets slit to size in narrow widths. In the past, mills would not supply sheets slit or rolled narrower than 12". With some capacity idle, they now apparently find it economical to do so. The lower-cost angle is expected to attract a lot of steel users.

MACHINE TOOL ORDERS DROP - New orders for machine tools are down to the lowest point since the Korean war began. Civilian demand, piled up by controls, has been pretty well satisfied. Heading for its first trade show in six years, the industry hopes that hard selling and new products will bring about a business pick-up by fall.

BUILDING STILL BOOMING - Construction continues as a strong prop to the economy. Construction contracts in August hit a new record in August, and were 11% over the same period a year ago, according to F.W. Dodge Corporation. Dodge President T.S. Holden says: "The August and 8-month totals brought the prospect that at the year's end a new high record for annual volume will have been set. If so, it will be the ninth consecutive year of construction volume gains." The rate of home building starts - 564,100 in the first six months - indicates that 1954 may be the best year since 1950, when the all-time high was set.

TITANIUM OUTPUT TO RISE - Present and prospective users of titanium will have an increasing supply of the metal to draw on in the next couple of years. The Electro Metallurgical Company, a division of Union Carbide and Carbon Corporation, will soon begin construction of the nation's largest titanium plant at Ashtabula, Ohio. It will produce at least 7,500 tons a year of the strong, lightweight metal.

Only a few more weeks to freezing weather!



Coal slicer at work on a frozen carload at the Rochester Gas & Electric Company plant.

Guard Against High Costs of Handling Frozen Coal

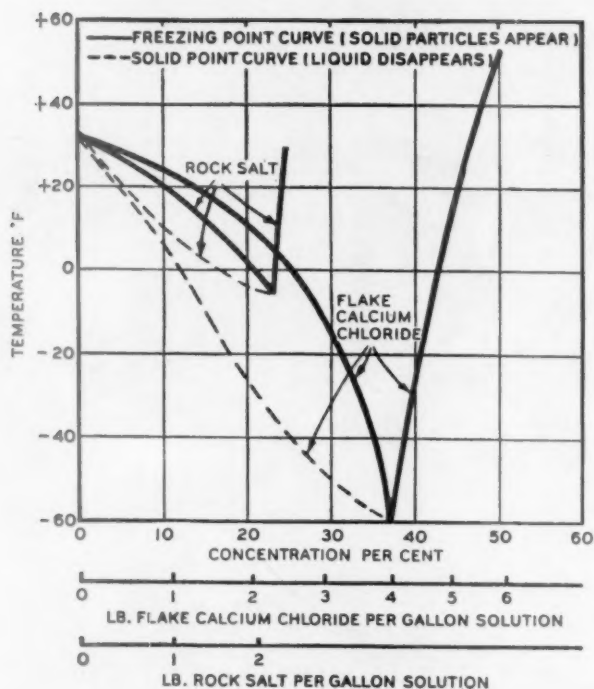
By A. Wyn Williams

Photographs by courtesy of Calcium Chloride Institute, J. C. Corrigan Co., Inc., Hauck Manufacturing Co., and Silent Hoist & Crane Co.

COAL BURNING industrial plants in the cold climate states are often faced with a vexing and costly problem in the winter months—the unloading of coal that has become frozen in transit on its journey to the plant from the pit-head, sometimes hundreds of miles away. It is a problem that plagues the heart of industrial America. For it is common to the majority of states which pace the country's industrial economy. Most of these states depend on coal to supply

more than 50% of their energy—the majority of them closer to 80%. In such states along the northern tier—Wisconsin, Illinois, Michigan, Ohio, Pennsylvania, New York, Massachusetts, Connecticut, and the others, the mean January temperature is in every case below the freezing point. Such temperatures spell trouble unless effective precautions are taken. This may devolve upon the purchasing agent. The time to start considering those precautions is now.

How does the problem arise, and why is it becoming more aggravated? As in the case of many other troublesome situations, it is a concomitant penalty of progress. Today, as the result of mechanized mining, coal has to be carefully prepared. This means that a large proportion of industrial coal will have been subjected to washing treatment to get rid of the foreign materials that the highly efficient mining machines dig up with the coal. The old time pick-and-shovel



Concentration of chemical and salt solutions has a known relationship to the freezing point.



Nozzle spraying of coal with calcium chloride solution to freeze-proof car prior to shipment.

Portable oil burning thawing trough in position under the hopper of a car.



miner was slower but more discriminating than the brainless robot machine, and left more of the dirty slate coal down in the pit. Today, it is cleaned at the surface, mostly by wet treatment. When wet washed coal travels in freezing weather, trouble travels with it.

There is another cause, also originating in progress. Medical science has learned about silicosis, once called the miner's TB. To combat this hazard, most of the industrial coal will have been wetted at the face of the seam to protect the miner, when drilling, against dust and a dread occupational disease. More moisture to freeze.

Therefore, because industrial coal is almost always subjected to artificial wetting, the problem of frozen coal is an ever present one during periods of low temperatures. Formerly, it was only a problem on the relatively infrequent occasions when coal cars in transit from mine to plant encountered rainy weather followed by quickly falling temperatures.

Added Costs

How costly can this problem be to a plant? It depends, of course, to a large extent, on Old Man Weather. In mild winters, it may entail very little cost—also very little in harsh winters when the proper precautions have been taken. But at times, it can add appreciably to the fuel bill, as proved by a case study reported by the Anthracite Institute.

A cost check was made on unloading a car of coal which had become frozen in transit to a coal user in Philadelphia, with the weather at 18 degrees F. The cost was matched against the cost of unloading a car coming in the same weather to the same user, but with precautions taken against freezing by a calcium chloride treatment. It

required two days labor by three men to unload the frozen car, at a cost of \$1 per ton, or \$50 unloading charges for a normal sized car. It cost only 20¢ per ton to unload the car treated against freezing, plus 10¢ per ton for treatment, thus showing an additional cost of 70¢ per ton, or \$35 per car, for handling the frozen coal.

This additional charge did not take into account other corollary or "hidden" costs, such as demurrage charges on the delayed return car, or damage to equipment in prying the coal away with sledges and hammers, or perhaps even dynamite, which is sometimes used to break up the load. Nor does it show the efficiency lost in raising steam in the power plant from reducing the coal to the wrong size by these crude unloosening techniques.

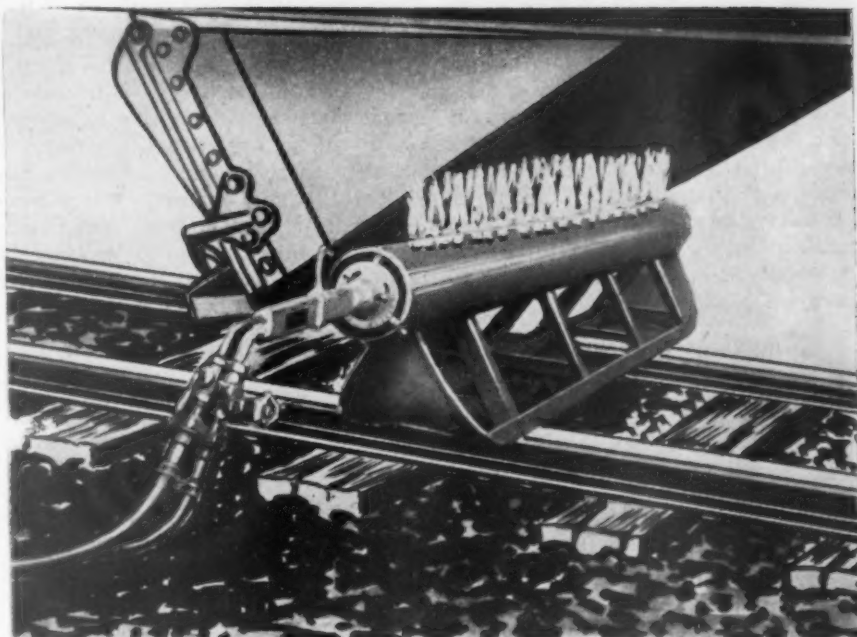
Attacking the Problem

The problem of frozen coal can be attacked by the purchasing agent at two points: (1) before the coal is shipped by the producer, or (2) at the plant itself, after the coal has arrived.

One method of avoiding frozen coal problems is to stockpile coal for the winter during the summer months. One well known company, with its main plant in the heart of New England, starts laying in its winter supply in April and builds up a 6-month winter supply until October, after which deliveries cease until the following spring. This practice, commendable in principle, is unfortunately not always possible, especially to the smaller plant where storage space is limited.

A variant of this method is used by a large manufacturer in Maine. In winter months, this plant will not accept deliveries by rail, but only by the coastal shipping route from Newport News. In this manner it avoids any chance of the coal becoming wet in transit and then encountering freezing weather. This procedure, again, is applicable only to a limited number of plants located on or near waterways, and those routes must be ones which freezing weather will not close down.

However, there are techniques which the purchasing agent of any plant can avail himself of, dealing with the frozen coal problem before the coal ever arrives at the plant. These techniques are comparatively new, but some of them are being resorted to more extensively as the need for precautionary treatment is becoming more urgent



Portable thawing tube using compressed air on fuel oil, kerosene or distillate in venturi type torch burners.

with the aggravation of the problem.

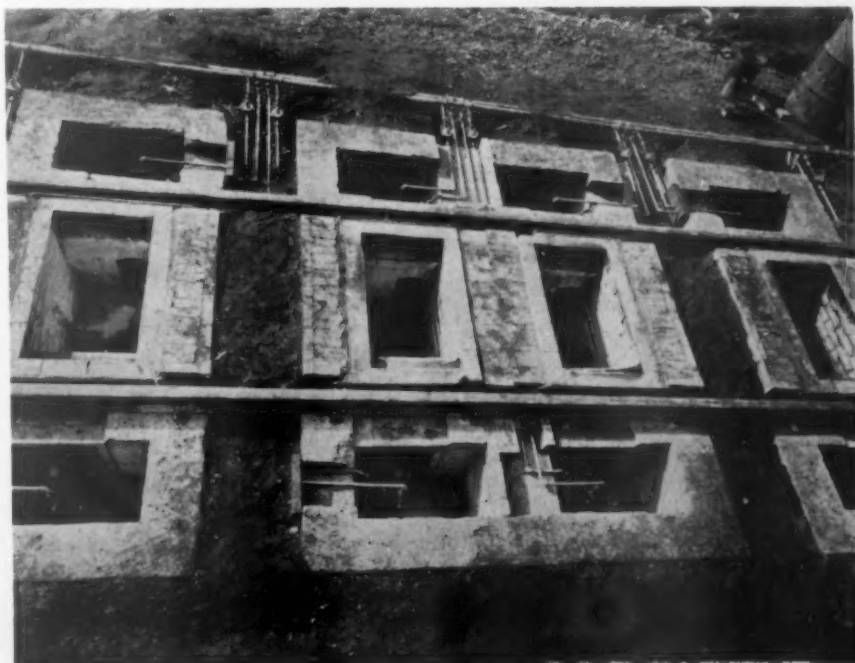
The techniques consist in treating the coal at the loading boom of the mine, or at any point before the coal is loaded into the car hopper. The treatments use two media—oil or chemical compounds.

The use of oil or oily substances is effective because oil itself is a water deterrent and therefore tends to lessen the amount of adhering water if the coal gets wet in transit. Also, tests prove that oil aids in

dewatering coals that have become wet in washing. It has been shown that a car of stoker coal will drain off surface moisture in 6 hours if sprayed with oil, whereas a similar car of coal, not so treated, will take 24 hours to drain. Therefore, the period during which a car of coal can run the risk of encountering freezing weather is reduced by 75%.

One handicap about oil is that the response of different coals to oil treatment varies. High moisture coals such as those in Illinois or

For a permanent installation, this type of radiant heated thawing pit is effective.



Indiana need to be treated with oil of much higher viscosity than coals from the West Virginia fields. On the other side of the balance sheet, oil does not damage equipment, as some of the chemical treatments may, and it adds to the Btu value of the coal. Therefore, the fact that it is not as efficacious in preventing freezing in low temperatures is somewhat offset by these other advantages.

Chemical Treatments

The principle justifying chemical treatments is that the freezing point of water is considerably lowered when certain chemicals are in solution. Those most commonly used are salt or calcium chloride, or some modification of these in the form of chemically prepared compounds. Solid calcium chloride is supplied commercially as flake, containing 70-80% anhydride calcium chloride and 30-20% combined moisture. Salt is usually supplied as ordinary crushed rock salt, about 99% pure, the small amount of impurity consisting of other salts which are also effective freeze-proofing agents.

It is important for the purchasing agent to realize that both calcium chloride and rock salt lower the water freezing point in a relation to the concentration used, as shown on the chart herewith.

The chart shows that the freezing points and solid points of calcium chloride solution are lowered with increasing concentrations—down to -60 degrees F with the strength of the 77-80% flake material at 37%. (Freezing point is the temperature at which the solid particles of frozen water begin to separate; solid point is that at which the solution ceases to be liquid.) It is to be noted that the lowest temperature at which a solution of salt stays liquid is -6 degrees F.

From these considerations, the purchasing agent, in telling his coal supplier to treat the coal for freeze-proofing, must supply information as to the most extreme low temperature likely to be encountered. From this, the coal supplier will know what strength solution to apply. Also, the purchasing agent must appreciate that rock salt treatment is not applicable at all if temperatures lower than -6 degrees F are likely to be encountered.

If chemicals are used in solid form, one-fourth of the quantity used in the treatment is generally applied to the coal in the hoppers and near the bottom of the car. The

remaining three-fourths is distributed uniformly throughout the coal. High concentration of the chemicals in the hopper is necessary to compensate for the loss of a portion during additional drainage of water from the coal, and to prevent freezing of the openings before normal drainage has been completed. The chemicals can also be used in solution, but in this case larger quantities per ton are required.

Some Points to Watch

Requesting his supplier to treat the coal for freeze-proofing will almost eliminate the purchasing agent's need to worry about the problem of frozen coal in cold weather. But there are still a few uncertainties. For one, the full amount of chemicals required varies with the amount of surface moisture on the coal, and it is almost impossible to gage this exactly. Another variable, unpredictable with complete accuracy, is the weather itself. Chemical treatment efficacious for normal freezing weather is no guarantee against trouble with a frozen car in a sudden spell of excessive cold.

Moreover, chemical treatment is not entirely without its disadvantages. The chief objection to chemically treated coal is an injurious effect on equipment. Coal treated with chlorides produces hydrochloric acid at high temperatures, as a result of decomposition of the chloride. This attacks steel in stoker grates, etc. Also, in the case of calcium chloride, because of its affinity for water, it has a drying effect on conveyor belts, etc., used in handling the coal.

It has the same effect on workmen's shoes or on their skins. Sometimes, therefore, workmen object to handling chemically treated coal. For this reason, and to overcome their objections, workers should be provided with rubber or cotton gloves, and with rubber shoes instead of leather ones.

Treatment at the Plant

For these reasons, among others, some plants prefer to meet the problem of frozen coal by treatment at the plant whenever it occurs. There are a variety of methods available to ease the problem for the purchasing department.

In larger plants, heated thawing sheds are sometimes provided, where the cars can wait overnight, letting the problem correct itself. For the smaller plant, where such elaborate provisions would not be

feasible, there are a number of relatively low cost pieces of equipment available. For example, a very simple device for the mechanical treatment of frozen coal is a heavy shear bar, raised and lowered in the car by an electric hoist. It is supported on an overhead structure on which it can travel to supply the effect of a shear bar at any point in the car.

Coming into more popular use, however, are various appliances for solving the problem by thermal methods. The simplest form is a portable oil burning trough, using ordinary fuel oil as the source of heat. Such troughs are generally used in pairs, in line with the bottom of the car hopper. Flames do not damage the car, as the troughs are removed before moving the car and running the risk of causing a fire in the journal boxes.

Elaborations of the thawing trough may use burners under compressed air atomization action. Some manufacturers claim that a simple thawing trough will pay for itself in handling a half dozen cars, as it will enable a frozen car to be unloaded after about 20 to 40 minutes, with no additional labor required except for moving the cars. In addition, a thawing trough—especially of the more elaborate type, can be used for a variety of other heating applications around the plant.

A more elaborate development of the thawing trough is the gas-fired thawing pit. This uses the principle of indirect radiant heating. The installation consists of a single pit arrangement constructed of reinforced concrete and refractory bricks. The heat is supplied by gas burners installed in the pit and flanking the rail track. The burner flames are never permitted to touch car bottoms, but give enough heat to make the refractory lining almost white hot. The heat from the pit lining is radiated upward to heat the entire car. Water streaming from the car during the thawing period is carried away by drains in the pit bottom. The thawing period is only about 20 minutes to a hopper.

Thus a variety of alternative means are available to cope with this vexatious problem, with a wide choice of effective means open to suit questions of economy or of capacity. The choice of which of these means to use for a particular plant will of course be governed by frequency of need and by balancing the factors of initial and operational cost against resultant savings of time and labor costs.

Inventory Taking Simplified

. . . Get together

. . . Get at it

. . . Get it over with

By Fred O. Goodnight, Buyer, Industrial Supplies, The Hardware & Supply Co., Akron, Ohio

THE AUTHOR is currently serving as President of the Purchasing Agents Association of Akron.

What used to be a disagreeable, dragged out, time consuming chore, with many chances for error, has now been reduced to a single concentrated week-end job in which the entire staff participates. Results are quicker and more accurate, and normal operations are not interrupted.

WE USED to spend almost two weeks taking our annual physical inventory. Now we do it in 11 hours.

Under the old system, we started about the 15th of December and aimed to finish about January 1st. Several men were assigned to the job and were supplied with numbered 5" x 7" sheets. The sheets were of five different colors so that we could segregate our inventory according to five departments—automotive, industrial supply, electrical, plumbing, and builders' hardware. The sheets had spaces for the description of the item, location of the stock, quantity in stock, and signature of the man counting.

After a binful was counted, the

slip would be placed in the bin, to be picked up and priced after all the counting was completed. If a shipment came in and stock was placed in the bin, the incoming amount would be added to the quantity shown on the slip. If we filled an order from the bin, the amount taken out would be deducted.

There were several things wrong with the system:

1. It was spread over too long a time, and the wrong time. During the holiday season, it was natural that our people's minds were not completely on their work, increasing chances for error. For the entire inventory period, a number of our personnel had to be taken away from their regular duties.

2. Some of our material is stocked in unheated parts of the buildings. In cold weather this made inventory taking a disagreeable job.

3. Frequently, incoming or outgoing shipments were not recorded on the slips in the bins as they should have been, thus affecting the accuracy of our inventory figures.

We have changed our inventory taking to the last week-end in October. The weather is warmer then, and the holidays are not distracting our people. We decided to try and complete the inventory in one week-end, so that slips would not be in the bins for days at a time and chances for error would be reduced. Normally there would be no additions or subtractions in stock quantities from the time the count is made until it is entered.

Every male employee—including

the president—participates in the counting. Each person is assigned to a definite job or section. We assemble on Saturday afternoon and are issued the 5" x 7" sheets as before. We then go to that part of the building to which we have been assigned, and go to work. Work continues until 5 o'clock Saturday afternoon. After an hour out for dinner, we work until 9 o'clock Saturday evening.

By that time, all the inventory has been counted and the numbered sheets have been placed in each bin or on each item. The building is checked to make sure that every item has a slip with it, showing that it has been counted. Then the slips are picked up and separated into piles, by color, for each of the five departments. It is the responsibility of each department to finish its particular inventory. They are not expected to stay and help other departments, even though they may finish earlier.

All information entered on the numbered sheets is transferred to a master sheet, which is then priced. Entering these sheets and prices is usually started on Saturday evening. It is completed the following morning, beginning at 8 o'clock. Some departments finish by 10 o'clock. The entire job is usually completed before noon on Sunday.

Simple arithmetic shows that we take our complete stock within 11 hours. Considering the number of items we carry—between 50,000 and 60,000—we feel that the system works very well. But every year some one comes up with another idea for improving our method.



1. Carload of slabs as they arrive on siding, ready for unloading.



2. Fork lift truck removes unit of 10 slabs, directly from the car.

Preplanning and cooperation with vendors on packing and shipping methods minimizes time and effort of handling heavy construction materials at building site, cuts installation cost 6¢ per sq. ft.

Specify Shipping

By H. S. Freeman

THE Purchasing Agent needs to make a careful survey of all costs involved in making materials available at the point of use, and to seek all possible cost reductions. This goes beyond the materials themselves and the delivered price. One field that offers a substantial opportunity for cost reductions is that of material handling. It has been estimated that this necessary operation represents from 20% to 80% of all production costs. Fore-

sight in purchasing can eliminate or reduce much of this expense.

Too little consideration is given to the unloading, storage, and the movement of the raw material to a point where it becomes a finished product or an end result is accomplished. This is especially true in the construction industry. Outmoded methods of getting material to the various crafts are still in evidence today, on both large and small construction sites all over the country.

Too seldom does the Purchasing Agent ask himself:

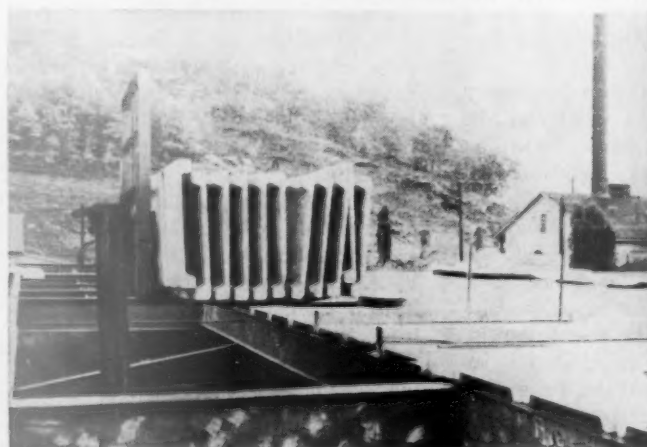
1. What is the best method of shipment to suit our particular needs on this commodity?

2. Can the material be used immediately upon unloading from the car or truck, or must it be stored for an indefinite period of time, necessitating one or more additional moves?

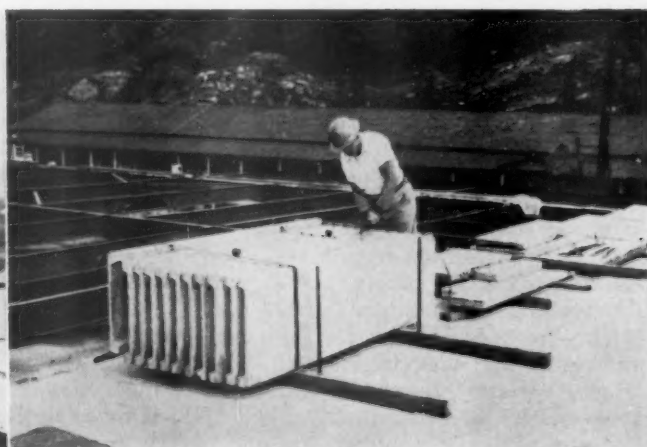
3. If the commodity can be used upon receipt, and multiple shipments are required to complete an order, has the vendor been advised to schedule and ship the material in the order and in the quantities in which it will be used?

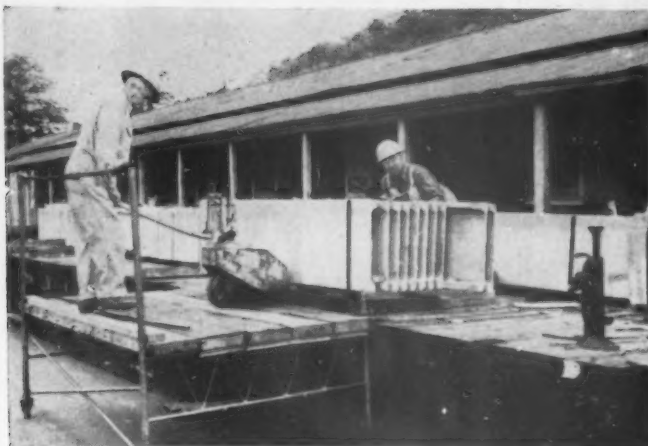
4. If material is not to be used upon receipt, are convenient and ample storage facilities available?

5. Inside the building, bundles of slabs are raised to roof level.



6. Bands are cut and iron rods removed from skids, releasing slabs.





3. Pallet jack brings skids into position on car deck for lift truck.



4. Slabs are carried directly to point of use on the fork lift truck.

Methods to Save on Handling Costs

Purchasing Agent, Construction Division, E. I. du Pont de Nemours & Company, Pompton Lakes, N. J.

These questions, properly answered, can frequently result in substantial savings.

Finding the correct answer to shipping and material handling methods paid off handsomely at the E. I. du Pont Company's Pompton Lakes Works. Recently an addition to this plant was constructed, to house manufacturing facilities. It is a single story steel and masonry structure, designed with a built-up roof, using reinforced pre-cast concrete roof slabs.

The cost of unloading, moving to the site, and erection of these slabs is a rather long and costly process. They are roughly 2 feet wide by 6 feet long, $3\frac{3}{4}$ inches thick, and weigh about 200 pounds each. Normally they are shipped to the project

in a box car. On arrival, they are unloaded, one at a time, by laborers, placed on a truck and moved to the building, where they are unloaded from the truck and raised to the roof by either a stationary lift or crane. The cost of movement from the carrier to being put in place on the roof varies from 20 to 35 cents a square foot.

Meeting with management and field supervision early in the course of the job, we were able to work out the following procedure, which reduced erection costs by about 6 cents a square foot.

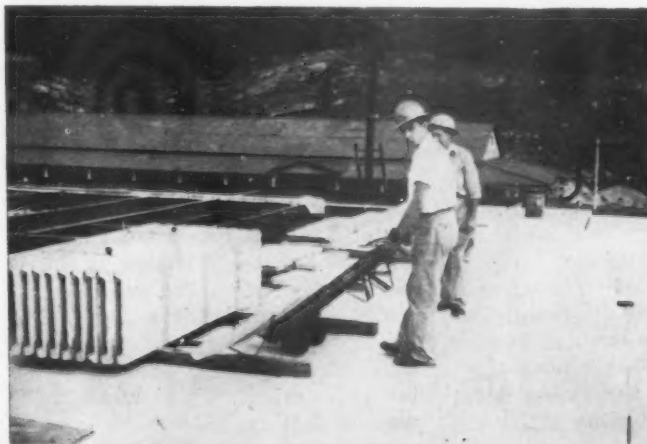
1. Vendor was advised as to date required at the site and the sequence in which they were to be used.

2. It was determined that the best method of shipping would be

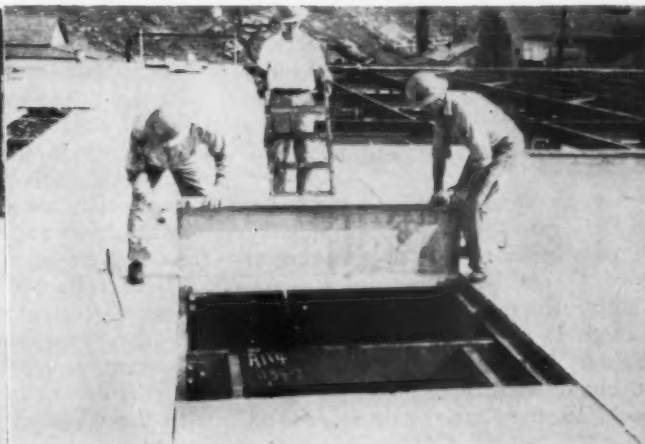
by flat car, in bundles of 10 slabs each, banded with two $1\frac{1}{4}$ " steel straps, and loaded lengthwise on the car on 4 x 4 skids. Since this method of shipment was entirely new to both the vendor and the railroad, several problems had to be worked out. It was necessary to have a car loading expert of the railroad go into the vendor's plant to work out all details of loading to conform with railroad regulations. It was also necessary to have a representative of a steel strapping company go into the vendor's plant to work out the problem of bundling the slabs. Although some additional cost was incurred by the vendor, due to more dunnage being needed to load the slabs on flat cars rather

(Please turn to page 300)

7. Slabs are moved individually to point of placement by hand truck.



8. Final step: slab is taken from hand truck and dropped into place.



BASIC SELLING

By **Cason Rucker**, Sales Engineer, Louisville Drying Machinery Unit, General American Transportation Corp., Louisville, Kentucky

SUMMARY: An industrial equipment sales manager here analyzes some of the basic rules of selling, which may have been neglected during the recent protracted sellers' market. They are important, and helpful. Yet it should never be forgotten that the fundamental purpose is to sell, and slavish adherence to the "rules" can sometimes be extremely wasteful of buyers' and salesmen's time, and may even confuse the issue rather than helping to make a sale. Consequently some of these rules are made to be broken—or at least to be applied with considerable discretion. Flexibility is the important thing, tailored to the situation and the personalities involved, and with a good measure of common sense.

A RECENT movie tells the story of a famous stage star, who received a Hollywood contract. Some months later, after working with screen techniques, he returned to Broadway and went into stage rehearsals for a new play. The producer then accused him of having lost his basic acting ability, and forced him to thoroughly review and practice all over again the basic fundamentals of stage acting before a live audience. He even went so far as to draw chalk lines on the stage to show the Matinee Idol how to walk.

A good many salesmen have "been to Hollywood" in the recent heyday of easy selling, and are finding it hard to get back into the groove. Many salesmen are first class actors, though it may be hard to picture them as John Barrymores. However, all should realize the need of going back to the basic principles and

procedures of selling at periodic intervals.

Many manuals and sales training movies have been prepared to show the buying motives and how to shape a sale around them. They are very clear and inspiring at the time, particularly when one is new at the game. Yet, for how long do we consciously follow them?

All of us slant our sales presentation in accordance with our own personality and experience. Yet, by placing undue emphasis on a minor facet, one's whole approach can be distorted to a marked degree. Sometimes I wonder if a salesman isn't obtaining orders in spite of himself. Occasionally he gets into a slump of "no orders" without knowing exactly what is wrong. In such a case it is best to go straight back to the basic selling methods and see whether he isn't falling into one or more of the common traps.

Rules and Exceptions

One principle that I have heard repeated time after time is never to call on a purchasing agent until he has had an opportunity to read his mail and become organized for the day. Yet, one successful salesman has always made it a practice to start his day by being in the lobby before starting time, awaiting the arrival of the purchasing agent. He is almost invariably kidded, invited in, interviewed, and ushered out before the daily headaches start to pile up. If appointments with other members of the organization are required, the purchasing agent can make them before they too, become tied up.

These calls are never long, and they are straight to the point. The salesman is thereby enabled to save important hours of his own time, and still leave the purchasing agent with the pleasant feeling of having

successfully completed and eliminated one of the day's problems at the very start. This early calling was not always appreciated, but it was successful to the extent of trying until discouraged and discontinued at certain places.

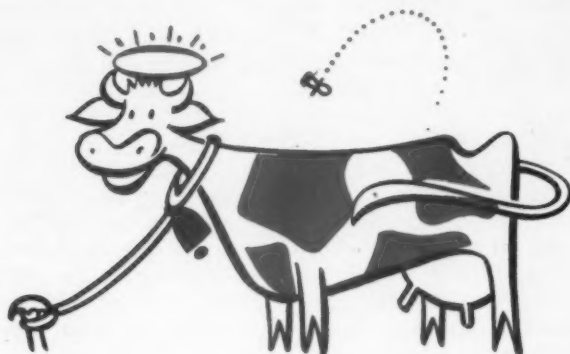
Calls and Calling Hours

Another shibboleth, in buying as well as in selling, is that the salesman and purchasing agent must see one another at every call, regardless of the time involved. A warm feeling was aroused by a very busy purchasing agent one day when a salesman was making a routine call. The receptionist announced the salesman in the regular way over the telephone. Without hesitating, the buyer asked to speak to the salesman. "I'm busy as the dickens today," he said, "and will have to keep you waiting a long time. Would you mind excusing me until your next trip?"

The very cordiality and regret in his voice spoke volumes. In a sense, the salesman failed in his objective—he didn't get his interview. But it was really the start of a beautiful, understanding friendship that lasted for years, to the mutual benefit of both sides. It did not happen very often, but the very honesty and spontaneity was penetrating.

A purchasing department's office hours for salesmen are planned for the best interest of both sides. They are generally respected. Yet a salesman should not hesitate to infringe upon those hours if he is sure that it is to the best interest of the buyer for him to do so, and if it cannot be avoided. Whenever possible, it is best to call ahead.

But don't make it a habit. The salesman should be careful not to place himself in the position of the boy who cried "Wolf" when there was no real cause.



How many of these "Sacred Cows" of purchasing and selling should be put out to pasture?

- Never start interviewing until the morning mail has been taken care of.
- The purchasing agent must see the salesman on every call.
- No exceptions to stated calling hours except by advance appointment.
- Every inquiry or quotation request must be answered in detail.
- "Contacts" must be maintained regardless of immediate prospects of business.
- Technical details do not belong in sales presentations, so long as they are "in the book".
- Sales calls should be followed up by a confirming letter.

The conscientious salesman should personally follow through on customers' inquiries and orders in technical and manufacturing departments.

On the other hand, when immediate information is required, the purchasing agent should have no compunction about demanding instantaneous service. It works both ways. And there's the same danger that abuse of the practice will lead to indifference and failure when the service is most needed.

How to Handle Inquiries

An extremely time consuming trap is the feeling that every inquiry should be answered in great detail. The salesman wants to give service, of course. But it is often good policy to call the inquirer to obtain more background on the particular case. Frequently, an approximate "order of magnitude" figure, or a routine catalog description is sufficient and serves the purpose quite adequately. The purchasing agent, since he himself is so burdened with detail, is usually

eager to help the salesman simplify his work. This is particularly true where the salesman has similarly demonstrated his desire to cooperate, in the past.

An inquiry for a special machine came in last fall. It would have been a nice order, completely justifying the large amount of detail work involved in getting out an estimate and a quotation. However, a telephone call to the buyer revealed that a short delivery was required, which could be met by a competitor, but not by the manufacturer in question. Upon learning the facts, the salesman asked to be excused from quoting, and explained why. The buyer appreciated the prompt answer which enabled him to proceed immediately with the competitor and get the order under way without loss of time. This straightforward handling was appreciated by and helpful to both.

Another such call to a purchasing agent indicated that the salesman didn't have a chance in a million to obtain the order, and that the inquiry was simply a matter of courtesy. Again, time consuming effort was eliminated. To do his best work, a salesman must not only feel that he has an even chance to obtain the order, but must have time to do a conscientious job. By sorting out the inquiries, and actually obtaining the over-all buying picture, the salesman avoids spreading himself too thin. He is then able to perform satisfactorily and promptly, as he should.

Orders That Don't Materialize

For four consecutive years, a buyer requested a detailed new proposal for practically the same set of conditions. Every time, when the project came up for an actual appropriation, the Board of Directors rejected the request for money expenditures. Some day it will pass and the equipment will be ordered. In the meantime, the buyer's file is so crammed and mixed up with detailed proposals in triplicate that it is a mess. Much of the data are already obsolete. What he needed at this stage was only a letter listing the equipment and an approximate figure of cost. Then, when the project was OK'd, the detailed specifications and specific quotations could have been requested. To be sure, the salesmen's eagerness may have been partly responsible for this situation. He had a "hot lead" which he didn't want to lose by default; but he didn't know the extent to which competition was in the picture and how hard he had to fight it.

After having worked hard on an order and lost it, a salesman is entitled to know the reasons for his failure—price, delivery, quality, special features, somebody's antagonism, or whatever else may have swayed the decision. In this way he can try to correct his deficiencies and improve his proposals for the buyer's benefit as well as for his own. Thus true competition is maintained. A salesman's endeavor should never be belittled. It represents considerable work which should be recognized and appreciated by all the parties involved, no matter who gets the order.

When selling equipment that is not ordered every day, it is possible for a salesman to get into the habit of friendly, pointless calls. They need not be pointless. A refrigerator salesman in a retail store, during

the depression of the '30s, had a stock approach whenever a prospective customer came in. "Can I wrap one up for you?" His question was always accompanied by a broad grin, and invariably aroused attention. He was attentive, too, and was quick to follow up any response; very frequently the other sales steps of interest, desire, and action followed.

It is nice to pay friendly calls on old customer friends, but they can never be allowed to forget that your visit has one basic purpose—to obtain an order, either now or in the future. The salesman doesn't have to be as blunt as our refrigerator salesman, but he has to put the point across. It's directly in line with the principle, "Ask for the order." This procedure certainly brings the case down to bedrock. Not only does it help in getting orders; it also filters out calls that are uneconomical and potentially unfruitful.

How Much Technical Information?

The advice of one experienced sales manager was to require his salesmen to periodically reread the technical and sales bulletins provided by the company, that the salesmen routinely sent out by the dozens. His experience had been that a salesman is prone to concentrate on one or two sales points to the exclusion of the others.

He did not mean that the salesman should recite every feature at every opportunity. His thought was rather that his men should be so familiar with the broad scope of the product that the proper point or argument should naturally pop up as needed. This avoided the tendency to inadequately tailor all objections to a stock answer, which was frequently beside the point and consequently unconvincing.

Such primary sales bulletin reading is tough medicine for an old timer to take. Nevertheless, it is essential. Why, even the expert who writes the bulletins has to refresh himself by periodically rereading his own words.

Great stress has always been placed on conscientiousness, but it can be carried to a detrimental climax. Other departments exist in his company, and a salesman should take advantage of them. Unless a definite sales need is involved, it is wasteful for the salesman to try to attend and supervise laboratory or service work. Those departments are set up to assist him, and they are manned by capable men.

His responsibility is to so plan and coordinate the work that it can be carried out purposefully, objectively, thoroughly and expeditiously.

It is a common failing to expect a laboratory to develop a hundred proved answers "day before yesterday". The salesman must determine what answer is wanted, and point the laboratory specifically toward that goal. It is then the laboratory's task to use their specialized training and facilities to determine the necessary data and findings. These data should be quickly tabulated and explained in a simple report, so that they can be used in solving the sales problem involved. Correspondingly, any mechanical troubles requiring service should be immediately reported to and corrected by the service department, with a prompt report going to the salesman. Laboratory personnel, service men, and salesmen should feel free to criticize each other—freely, but above all constructively. A close degree of cooperation works wonders, to the ultimate benefit of the customer.

Before or After?

After leaving the doctor's office, I always think of more symptoms or additional questions that I should have asked, but it is then too late. My time is up. This problem was eventually overcome by writing out the pertinent facts on a slip of paper for reference, or to be handed to the doctor on arrival. Now the visits are complete, to the point, and more beneficial.

The same feeling of futility sometimes comes over a salesman after leaving a customer's office. There was something more that he should have said, or done, or performed differently. An explanatory or confirming letter is sent to complete the call that should have been completed at the time. This is time consuming for both sides. Often, in the stress of work, it is not properly read or understood, or related to what has gone on before.

The solution may well be the same as in the case of the call on the doctor. Before each call, a short outline of the points to be brought out is noted. This is followed during the interview, and the points are checked off as covered. Additional points are marked as required during the conversation. This procedure is handled openly, but as unobtrusively as possible. It helps considerably in completing points while they are hot, and in eliminating a later review and rehash of cold turkey. When calculations are re-

quired, they are usually made at the time, with a carbon copy for the seller's office record. The whole object is to leave the customer's office with a feeling of completeness on both sides, with no loose ends to be gathered up later. There is often an inner pressure to hurry up the call by glossing over a lot of this. Still, in sticking to this procedure, the end of the day usually finds the important calls made and much of the need for calling back eliminated. In most cases, ordinary delays in lining up and carrying through a greater number of routine or half-calls will offset the extra time required for complete interviews.

To do this satisfactorily, one must have a good set of up-to-date records, an excellent memory, and an inquiring mind. To develop these is a stimulating challenge. They are particularly useful in building up the best tool of all—experience. Experience gives one the ability to discard the impractical, and allows one to concentrate clearly, in a straight line, on the best method towards attaining the objective. When a man has that, plus a sympathetic understanding and feeling for the customer's needs, he need never worry about a welcome.

Good Working Relationships

Experience will also tell the salesman when he is fighting a lost cause, when his best move is to beat a fast retreat to other pastures. The old simile of the overstaying guest certainly applies to sales calls. When he is outsitting his welcome and usefulness, he is no longer a good salesman.

One of the nicest ways to develop a good working relationship is to compliment a man to his boss, when the remark is in order. By that I mean in a sincere, natural way, as the recognition and appreciation of competence, courtesy, and fair dealing.

The points mentioned above have been helpful in a number of cases towards maintaining a consistently fruitful and professional approach to selling. They may stimulate other thoughts, pro or con, toward that objective.

The salesman must always be in a flexible position. He must be able to take advantage of changing conditions as they occur. His work does not nail him down to a static, unstimulating, unsatisfactory routine. To a great extent, it's his own show to handle. But if he strays too far from the basic principles, he's likely to lose his audience—and his orders.



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Recent Court Decisions Clarify Purchase Law

By Leo T. Parker

DURING the past two years many new legal pitfalls for purchasers have developed. When deciding these legal controversies the higher courts, in various localities, clearly explained how purchasers who lost law suits, might have won favorable verdicts. I shall briefly review the cause and outcome of these outstanding higher court decisions.

Seller Liable on Warranty

According to a late higher court decision a retail seller is liable on an "implied warranty" that merchandise is reasonably worth the purchase price, and without defects. This is so although the manufacturer of the merchandise expressly warranted the merchandise.

For example, in *Kohn v. Ball*, 254 S. W. (2d) 755, the testimony showed facts, as follows: One Ball bought a new automobile from the Paris Motor Company, a retail seller. In a day or two the car, when exposed to rain, leaked around the doors and front, damaging the seats and floor coverings. Upon complaint by Ball, repeated efforts were made by the retail seller to correct the defects. Subsequently, Ball sued the retail dealer for damages, based on an implied warranty.

The dealer defended the suit, first, on the grounds that he was not liable on an implied warranty because the express warranty of the manufacturer excluded the implied warranty of retail dealers; and second, Ball had complained directly to the manufacturer about defects in the automobile, whereby the retail dealer was relieved from further responsibility.

It is interesting to observe that the higher court held the retail automobile dealer liable to Ball for \$450 damages, and said:

"A warranty as to the condition of the car when sold is imposed upon the retail dealer. The measure of damages is the difference between the value of the goods at the time of delivery and the value they would have had if they had answered to the warranty."

This court explained further that the usual "implied" warranty of a retail dealer or seller is not cancelled by the fact that the manufacturer, or wholesaler, from whom

fact whatever in relieving the retail seller from his normal responsibility. The fact is that, irrespective of expressed guarantees made by manufacturers or negotiations between the buyer and manufacturer, the retail seller remains liable on his own implied or expressed guarantee.

Damages Awarded to Buyer

For example, in *Motor Company v. Johnson*, 254 S. W. (2d) 931, the

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THE JOB



REGARDLESS OF MANUFACTURER'S GUARANTEE, DEALER IS
LIABLE ON AN IMPLIED WARRANTY OF FITNESS

the retail dealer purchased the merchandise, gave an expressed warranty or guarantee.

On the other hand, this court explained that if the retail dealer had given the purchaser an expressed guarantee the implied warranty would have been automatically cancelled.

This court also explained that the fact that a purchaser complains directly to a manufacturer relative to defective or unsatisfactory merchandise, this fact has no legal ef-

testimony showed these facts: One Johnson bought a new motor truck from a retail dealer for which he paid \$1,734.21, plus the usage tax and license fee. Soon afterward Johnson took the truck back to the dealer because it was defective. At that time he had then driven the machine only 300 miles. Johnson returned the truck to the dealer for repairs 25 times, and each time he was assured by the dealer that it would be put in good condition. That was never done.

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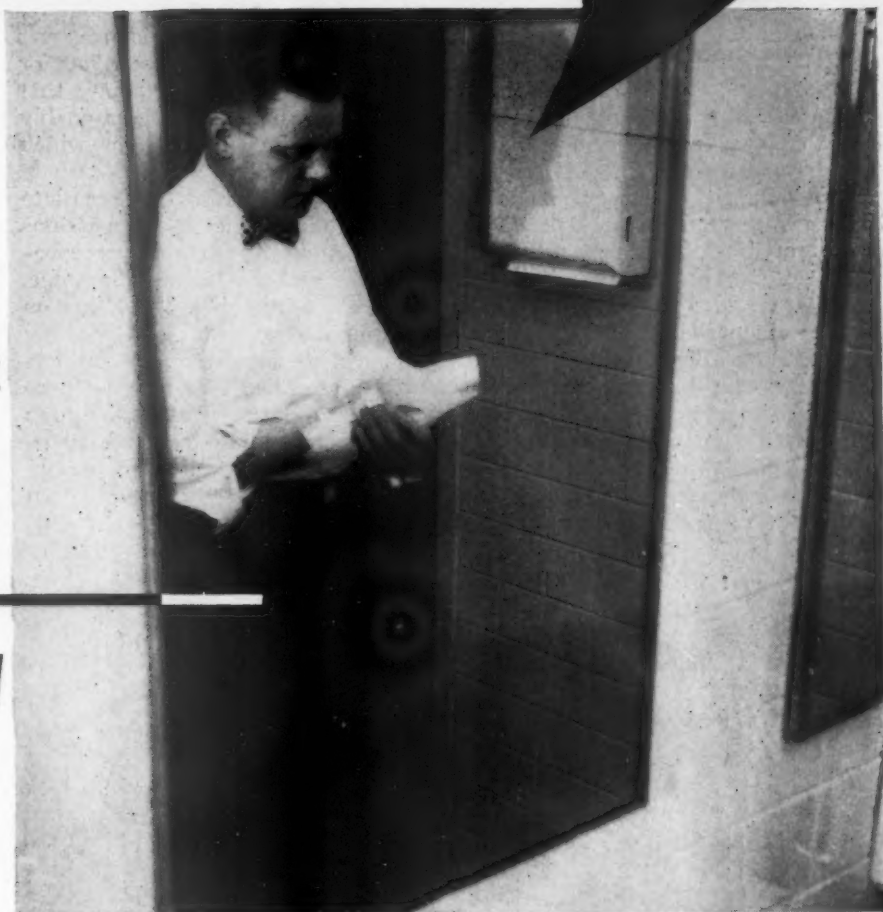
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The lower court awarded Johnson \$1,500 damages, and the higher court approved the verdict, saying:

"The verdict was for \$1,500 for all damages. If the truck was in the condition it was supposed to be and as recommended to him, it was worth what he paid for it—\$1,785.85, and the fair and reasonable market value of the truck in the condition it actually was in was \$535."

Hence, in this case the higher court awarded the purchaser damages equal to the difference between the purchase price of the truck \$1,734.21, and its actual value \$535, plus incidental damages to the purchaser of \$300.79. This was so although the retail dealer gave Johnson no guarantee. The court held that the retail dealer was liable to Johnson on an implied guarantee that the truck was worth the purchase price of \$1,734.21 less the actual value of the truck, and plus damages sustained by Ball as a result of the seller's breach of the implied guarantee. In this respect the court said:

"The case was submitted under an instruction of breach of an implied warranty that the truck was free from defects and was suitable to perform the purposes for which it was bought."

The court awarded Johnson \$250 additional damages for loss of use

to the fact that it was returned within three weeks and continuously thereafter for repair, and the defendant continuously assured the purchaser that it would be put in good condition and repeatedly undertook to make it work properly. In any event, the purchaser had the right of election to rescind or to sue for damages, and he elected the latter remedy."

For comparison, see *Sparks v. Doss*, Ky. 353 S. W. (2d) 245. Here the retail dealer seems to have accepted responsibility under the manufacturer's warranty. Nevertheless, the higher court held the retail dealer liable on an implied warranty and explained that evidence was sufficient to sustain a verdict for breach of an implied warranty that the merchandise was reasonably suitable for the purpose for which it was bought.

Therefore, according to these late and leading higher court decisions the law is established that, irrespective of a manufacturer's guarantee, the retail seller always is liable on an implied guarantee. Generally speaking, under an implied guarantee the purchaser may recover more damages from the retail dealer than is recoverable under a manufacturer's usual guarantee to supply defective parts for which installation the purchaser agrees to pay.

an implied warranty that the goods shall be fit for such purpose.

Therefore, where a buyer informs a seller the purpose for which he is buying merchandise, the law expects the seller to supply merchandise reasonably fit for this known purpose.

Second, where the goods are bought by description from a seller who deals in goods of that description, there is an implied warranty that the goods shall be of merchantable quality. In other words, a purchaser of merchandise for resale need not have a seller sign a contract that guarantees purchased merchandise is suitable for resale at a reasonable profit. The law implies that the seller gives the purchaser such a guarantee.

Third, if the buyer has examined the goods, there is no implied warranty as regards defects which such examination ought to have revealed. This means that if a purchaser inspects merchandise and later purchases it, the law assumes that he takes the goods without regard to known and clearly apparent defects. On the other hand, the seller is liable on an implied guarantee that inspected merchandise is free from hidden defects.

Fourth, where merchandise is sold under a patent, or trade name, there is no implied warranty as to its fitness for any particular purpose. In other words, a purchaser must use his own judgment whether patented or trade-mark merchandise is worth the contract price. This is so because the law does not limit the profits earned by a patentee or owner of a trademark. Nevertheless, the fact that a sale is of a known, described and definite article, by its patent or trade name, does not preclude an implied warranty of merchantability or fitness for a purpose for which such article is ordinarily or generally sold. On the contrary, it is held in most of the cases that there is such a warranty. See 46 Am. Jur. 537, sec 351. See also, *G. M. C. Co. v. Kelley*, 231 P. 882; 168 A.L.R. 405, for application of this rule to sale of new merchandise.

Fifth, an express warranty does not negative or cancel a warranty or condition implied by law, unless the testimony shows that the express guarantee clearly conflicts with an implied guarantee. Thus where an express guarantee states that the seller warrants the merchandise against defects for only 30 days, no court under an implied



MANUFACTURER HAS PRIMARY LIABILITY FOR DEFECTIVE GOODS, BUT INJURED PARTY MAY SUE THE DEALER

of the truck while it was in the seller's shop for repairs.

In answer to the dealer's argument that Johnson was not entitled to a favorable verdict because he failed to promptly rescind the contract, and deliver the truck back to the dealer, the court said:

"Concerning the contention that the appellee (Johnson) must have promptly offered to return the truck and to rescind the contract, we point

A review of late and leading higher court decisions disclose this well settled rule of law, as follows: All sellers are liable to purchasers on an implied guarantee or warranty where the testimony and evidence proves that, first, if the buyer, expressly or by implication, makes known to the seller the particular purpose for which the goods are required, and the buyer relies on the seller's skill or judgment, there is



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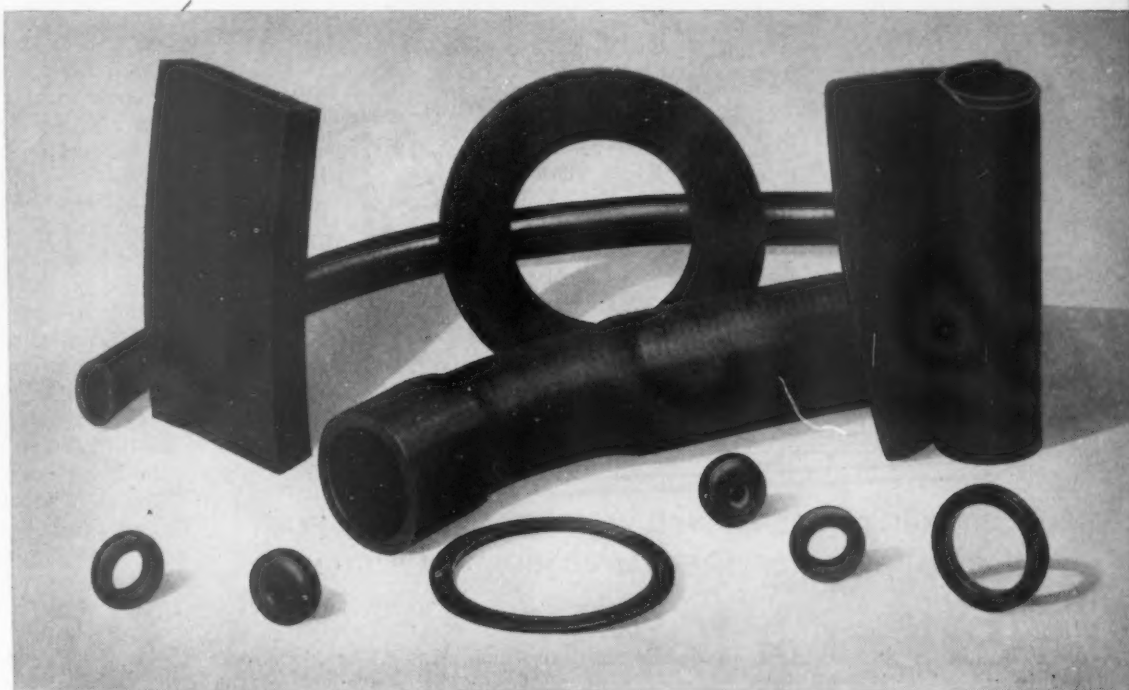


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guarantee will hold the seller liable on more than a 30 days guarantee.

A great deal of discussion has arisen in the past over this legal question: "Is the dealer or distributor or manufacturer of a defective equipment or merchandise liable in damages to a purchaser who is injured as a direct result of the defects or dangerous quality of the merchandise?"

recovers damages, the dealer or distributor may obtain complete indemnity from the manufacturer if the testimony shows that the distributor's negligence did not contribute to the injury, and also that the dealer was not negligent. See *MacPherson v. Buick Motor Company*, 217 N. Y. 382; *Foley v. Pittsburgh*, 68 A. (2d) 517.

The higher courts have laid down

stated it was in "perfect" operating condition, and that the seller had just recently spent more than \$200 making complete repair of every deficiency. Also, Shreve testified that after telling the seller what he wanted the equipment for and that he was relying on him as a responsible dealer, the dealer said, "Yes, sir, Mr. Shreve, I have known you a long time, and you can depend on me, I will take care of that equipment and if anything goes wrong with it I will guarantee it 30 days."

The seller denied that he had given any guarantee on the equipment for which Shreve paid only \$385. The lower court considered all this conflicting testimony and rendered a verdict in favor of the seller, holding the latter not liable on the alleged warranty. The higher court approved the verdict, saying:

"Plaintiff (Shreve's) evidence and defendant's (seller's) evidence, as to the terms of the warranty and the breach thereof, were conflicting. The case was tried before the lower court and judgment rendered for the defendant (seller). In this case where the evidence is conflicting, the trial court was in a better position to judge of the credibility of the witnesses and we think this court should defer to the judgment of the trial court on such conflicting testimony."

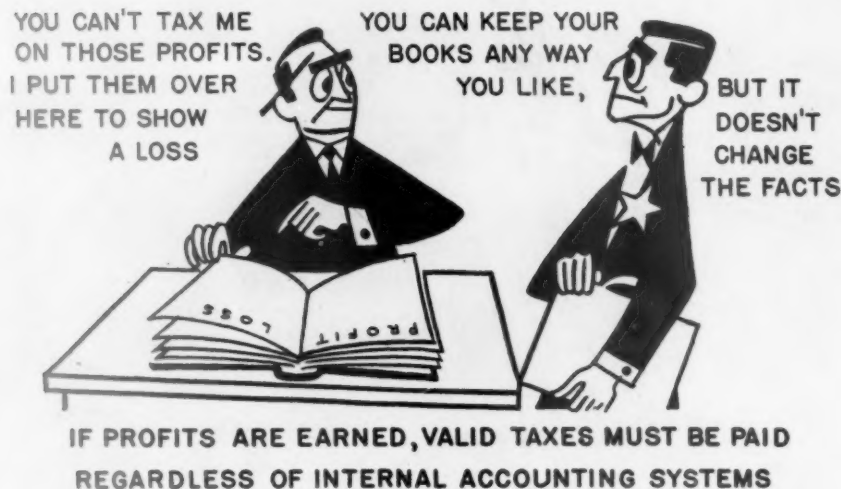
Validity of Tax Payments

Considerable discussion has arisen from time to time over the legal question: "If a retail dealer or purchaser sells merchandise on approval, must he pay the state's sales tax on merchandise not acceptable by the purchaser?"

According to a late higher court decision, the answer is no.

For illustration, in *Kloepfer's Inc. v. Peck*, 110 N. E. (2d) 560, it was disclosed that a retail dealer was engaged in a business, part of which may be referred to as "approval transactions". Thus, when a customer desired to purchase a certain article, the article was delivered to him on approval. No down payment was required of the customer and he was not obligated to pay for the article unless he later decided to keep it. If he did not approve of it, the article was returned to the seller and the customer was not obligated to pay the seller anything.

This legal question was presented a higher court: Is the dealer obligated to pay a state's sales tax on all merchandise delivered to customers on approval?



The higher court clearly answered this question in the late case of *Birdsong v. General*, 90 Fed. S. 16. Here one Birdsong sued a manufacturer for heavy damages claiming that the manufacturer manufactured and delivered to its distributor certain merchandise that was defective and that the defects resulted in an accident in which Birdsong was seriously injured.

The higher court refused to hold that Birdsong could recover damages saying:

"To recover a judgment plaintiff (Birdsong) must prove that General (manufacturer) negligently manufactured and delivered to Jacobs Brothers (distributor) this defective safety equipment, regardless whether recovery is based upon that negligence or upon breach of warranty by such negligence."

This court went on to explain that the primary responsibility for negligently manufacturing and delivering to a dealer or distributor defective equipment or merchandise is upon the manufacturer. However, if testimony shows that actually the merchandise was defective and caused his injury the injured purchaser may, if he prefers, sue the distributor or dealer from whom he purchased the merchandise or equipment. Then, if the purchaser

the law that neither a manufacturer nor a distributor or dealer is liable in damages to the purchaser of defective equipment or merchandise unless positive testimony is given that the same was defective and that negligence of the manufacturer or dealer resulted in the defect or dangerous condition. In other words, if the defect is inherent or concealed, the manufacturer or dealer is not liable, under ordinary circumstances.

Conflicting Testimony

Recently a higher court held that a lower court may decide whether a seller of merchandise is liable on a warranty, if the testimony is conflicting. Also, this higher court held that it will approve the lower court's verdict, unless strong testimony is given to the contrary.

For example, in *Shreve v. Zuvekas Company*, 254 S. W. (2d) 254, the testimony showed facts as follows: One Shreve purchased from a retail dealer certain used equipment. Within a few days the equipment developed defects.

The purchaser, Shreve, sued to compel the seller to take back the equipment and refund the purchase price. During the trial Shreve testified that before he bought the equipment a salesman for the seller

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The higher court answered this question in the negative, saying:

"Obviously, if a transaction does not involve a 'sale' within the meaning of the Sales Tax Act, no tax is levied. It is apparent that the mere transfer of possession of property is not a sale unless it is a transfer 'for a consideration.'"

Accounting System Does Not Avoid Tax Payments

According to a recent higher court decision, no particular system of accounting can avoid payment of taxes levied under valid laws. In other words, if a company earns profits it must pay valid taxes, notwithstanding its accounting system to the contrary.

For example, in *Carson, 234 S. W. (2d) 644*, the testimony showed facts as follows: A manufacturer sued the State of Tennessee to recover alleged overpayment of franchise and excise taxes amounting to \$35,951.92. The testimony showed that the plaintiff company is an Illinois corporation, engaged both in manufacturing and selling in Tennessee. It has a factory at Chattanooga, and has retail sales outlets at various cities in the state. In addition to the retail outlets in Tennessee, the company has sales branches in more than 100 cities throughout this country. The company's accounting system attributed no net income to its Tennessee operations.

Nevertheless, the Tennessee State's Tax Commission decided that the company's system of accounting failed to take into consideration the fact that manufacturing losses were more than offset by retail sales profits. The higher court agreed with the Commission and refused to hold in favor of the company, saying:

"Accounting practices for income statements may vary considerably according to the problem at hand. A particular accounting system, though useful or necessary as a business aid, may not fit the different requirements when a state seeks to tax values created by business within its borders."

Use Tax Held Valid

An outstanding decision was rendered by the Supreme Court of the United States a few months ago. This court upheld the right of states to tax, as high as \$1,580 annually, for use of each motor vehicle used on highways in the state.

For illustration, in *Coordinated Transport v. Illinois, 73 Supreme*

Court Reporter, 468, it was shown that a state passed a law taxing motor trucks for "use of the public highways". The amount of the annual tax is dependent upon the gross weight of the vehicle. The tax ranges as high as \$1,580 per vehicle.

The Supreme Court of the United States held this state law valid.

For comparison see *W. F. Anderson & Sons Company v. Glander, 97 N. E. (2d) 29*. Here it was shown a state law exempts from "sales" and "use" taxation all things which are used directly in the production of "tangible, personal property for sale by processing."

The testimony showed that a company is engaged in the business of manufacturing and selling concrete. Its activities in this respect are confined to the so-called "transit mix" method, wherein the necessary ingredients for producing concrete are placed in a metal mixer at the plant. This mixer is mounted on and attached to a motor truck chassis. The mixing or manufacture of the concrete occurs by the operation of machinery connected with the mixer during the time the mixer and its contents are being transported on the motor truck to the location

chassis constitutes a violation . . . in that such chassis in fact are mobile bases for the concrete mixers and that since the purchases of stationary or fixed bases are not taxed, discrimination has been practiced against appellant in the assessment of sales and use taxes on the purchase of those motor truck chassis which serve the same purpose."

Employee Not Authorized

Modern higher courts consistently hold that no employer is responsible on a contract made by an unauthorized ordinary or special employee, nor for tax payments. This same rule of law is applicable by courts when determining whether or not a foreign corporation is "doing business" in a state, and liable for tax payments. Modern higher courts consistently hold that the corporation is not liable if it transacts intrastate business.

Recently a higher court held that if an unauthorized employee transacts intrastate business in a state, his employer remains within the scope of laws affecting interstate business.

For example, in *Western Gas Appliances v. Servel, 257 Pac. (2d) 948*,

BUT OFFICER, THIS IS NOT A TRUCK. IT'S SIMPLY
A MOBILE BASE FOR MY MIXING EQUIPMENT



TYPE AND USE OF A MOTOR VEHICLE DOES NOT EXEMPT IT
FROM STATE HIGHWAY USE TAXES

where the concrete is to be delivered and utilized.

The counsel for the company contended that these motor trucks and chassis are exempt from taxation in view of the above mentioned state law. The higher court refused to agree, saying:

"To our way of thinking there is no sound basis for sustaining appellant's (company) rather ingenious contention that the taxation of the purchase of the motor truck

the testimony showed facts, as follows: The Servel is a Delaware Corporation and has its principal place of business in Indiana, where it manufactures gas home appliances which are distributed nationally through wholesale distributors in the various states. The Western Gas Appliances, located in Utah, was for several years a distributor of appliances manufactured by Servel. Later Servel terminated its con-

(Please turn to page 288)

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Roof Vapor Barrier Passes Fire Test

Industrial purchasing agents will soon be hearing about a new vapor barrier for plant roofs. Recent fire tests revealed that it promises to eliminate one of the major causes of the General Motors Livonia disaster—the spreading of the fire from hot asphalt dripping from the roof to the plant floor.

Two types of roof were fire tested in the research laboratory of the Phillip Carey Manufacturing Co. The first was similar to the roof of the Livonia plant, two ply asphalt and felt vapor barrier over a steel deck. When this roof was heated by gas burners in the laboratory, mol-

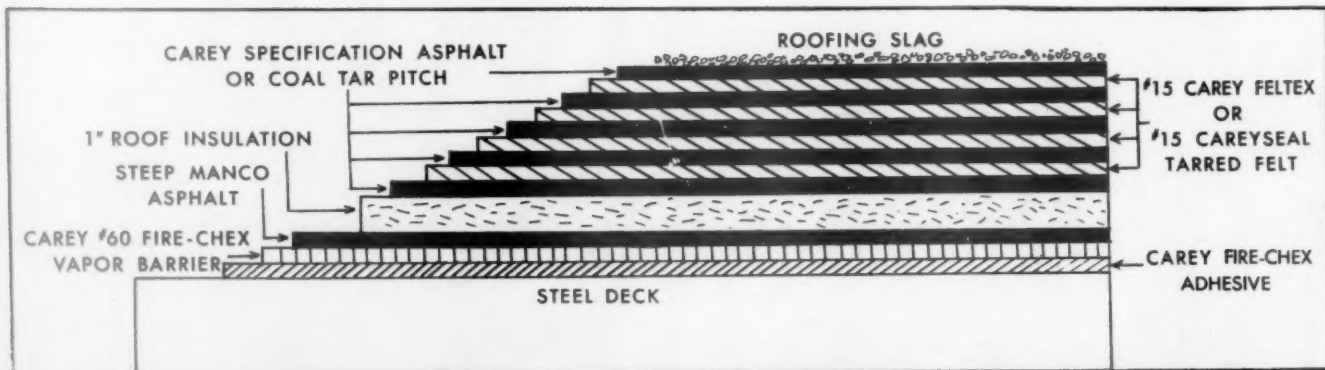
Burning asphalt dripping through the steel deck of a conventional roof can help turn a local fire into a plantwide disaster.



ten asphalt rapidly started dripping through the steel deck. In an actual plant fire, the hot, burning asphalt would contribute to the spreading of the blaze and would also gener-

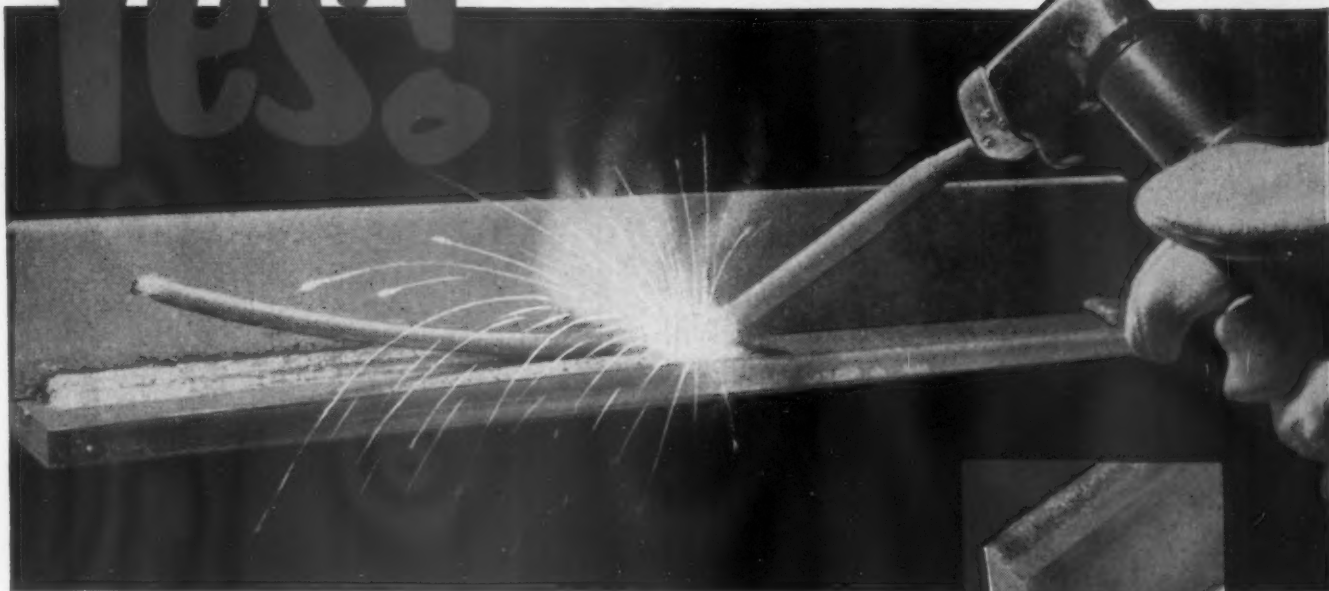
ate thick smoke and gas which would handicap firefighting operations.

The second roof tested was dif-
(Please turn to page 136)



Barrier sheet between the steel deck and the tar and felt roofing layers helps keep plant fires from spreading.

Yes! Slag peels as you weld!

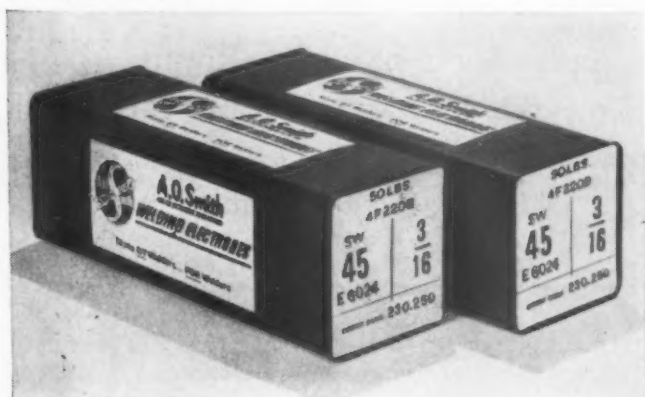


New A. O. Smith SW-44 iron powder electrode offers outstanding speed, bead appearance



Unretouched photo proves SW-44's fine ripples, good wash-up and complete absence of undercut.

THROUGH RESEARCH . . . A BETTER WAY. Once again the A. O. Smith laboratories have advanced the ease and speed of welding. This time it's the SW-44 — a *perfected* iron powder electrode that's practically *self-cleaning*.



For AWS Class E-6020 work, A. O. Smith offers the job-proved SW-45 heavy-coated iron powder electrode. Here are high physicals and consistent x-ray quality plus fast deposition, good bead appearance, ease of cleaning. Like the SW-44, it's the high-speed answer for horizontal and down-hand fillet and groove welding.

Not only can you deposit far more E-6012 type of weld metal than with conventional electrodes — you *almost eliminate the job of cleaning*. What's more, bead appearance is outstanding — flawlessly smooth with fine ripples. It's as easy as squeezing tooth paste out of a tube. And re-striking is easy . . . even with a completely cooled rod.

If you haven't tried the new SW-44, see your A. O. Smith distributor today. Or you can get all the facts from A. O. Smith Corp., Milwaukee 1, Wisconsin.

Through research  . . . a better way

A.O. Smith

C O R P O R A T I O N

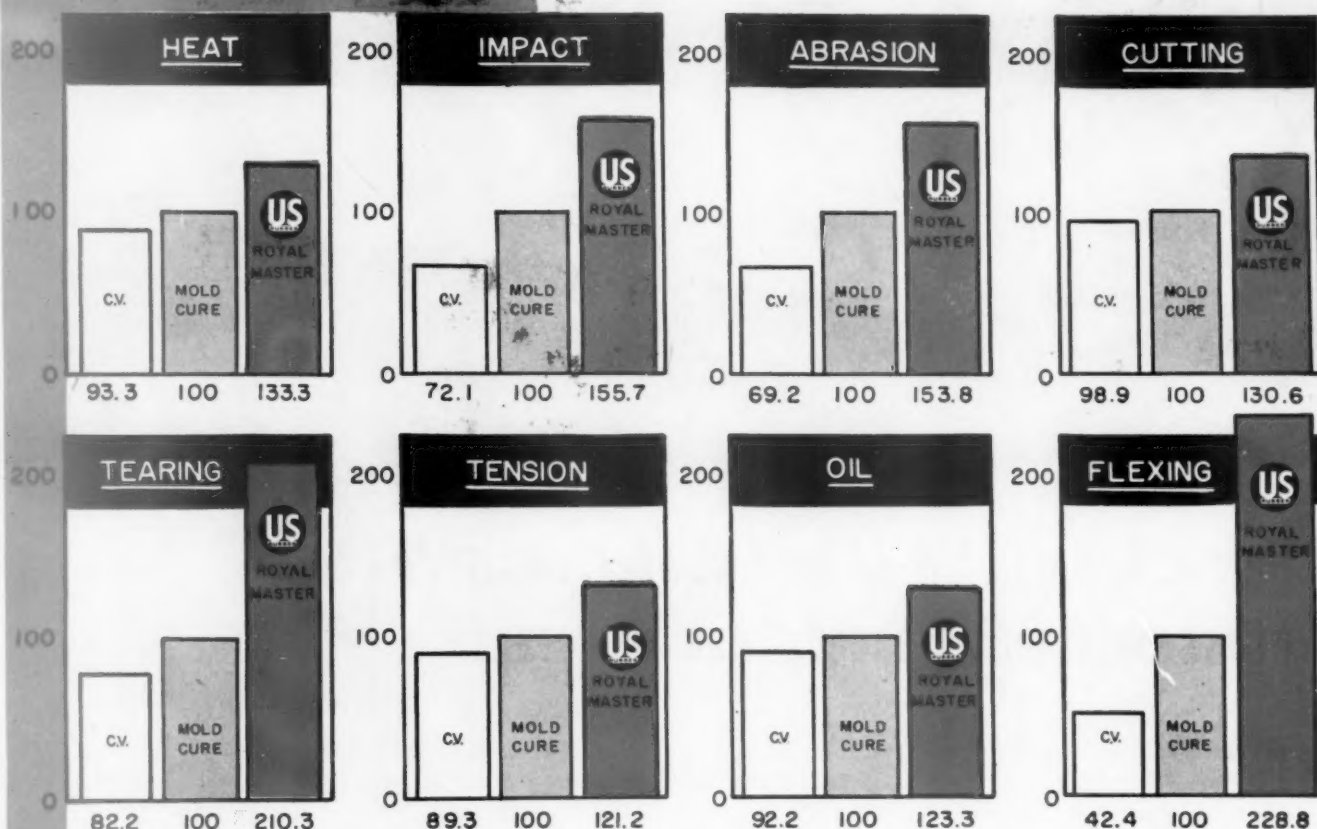
WELDING PRODUCTS DIVISION

Milwaukee 1, Wisconsin

INTERNATIONAL DIVISION • MILWAUKEE 1, WIS.

New

U.S. ROYAL outperforms,



Comparative performance of portable cords related to major life factors.

Graphs illustrate the outstanding superiority of new U. S. Royal Master Cord — over the average of molded cords and the average of short-lived continuous vulcanized cords of other makes — on every major life factor. (Average of other molded cords is rated at 100%.)



UNITED STATES

ELECTRICAL WIRE AND CABLE DEPARTMENT

MASTER portable cord outlasts all others!

Comparative tests show U. S. Royal Master gives \$1.88 in value for every \$1.00 spent — almost twice the service value of the average of other molded cords!

LOOK FOR THE NAME — U. S. ROYAL MASTER



Two years ago, "U. S." engineers began a *complete reexamination* of portable cord construction, service life, and the causes of cord failure.

Over 10,000 tests were made. More than a thousand cords of all leading makes, including our own famous U. S. Royal Cord, were analyzed, tested, and compared.

Every life factor was considered and carefully evaluated, alone and in its relation to overall cord performance and service life.

Backed by 64 years of experience in the manufacture of electrical wire and cable, U. S. Rubber engineers then translated their findings into an entirely new portable cord, designed to surpass any other previously made.

Extensive tests, both in the laboratory and in outside plant installations have proved this new portable cord startlingly superior in every respect!

New U. S. Royal Master is unquestionably the finest cord you can buy!

From every standpoint, as the charts at left illustrate, new U. S. Royal Master is a finer, more durable cord—actually gives 88% longer life than the average of competitive molded cords—far longer than *any* other cord—surpassing even a hypothetical cord incorporating the best features of all those tested!

Far greater value, too! In spite of almost doubled service life, this great new cord is in the same price category as other molded cords—giving you \$1.88 in cord value for every cord \$1.00!

Prove to yourself the outstanding superiority of new U. S. Royal Master Portable Cord — in both service life *and* economy! Get in touch with your "U. S." distributor today!

Approved by Underwriters' Laboratories, Inc.

RUBBER COMPANY

ROCKEFELLER CENTER, NEW YORK 20, N. Y.

For More Information Circle No. 164 on Inquiry Card—Page 17

New G-E **TRI 55** CLAD Motors

REG. U.S. PAT. OFF.

NOW AVAILABLE THROUGH 5 HP!

**You can get Prompt Service and
Quantity Shipment on all new motors listed below . . .**

TRI/CLAD '55' MOTORS—3-PHASE, 60 CYCLES, NEMA DESIGN B

| HP | 3600 RPM | 1800 RPM | 1200 RPM | 900 RPM |
|-------|--------------------------|-----------------------------------|--------------------------|-----------------|
| 1/2 | | | | K182 220/440 v* |
| 3/4 | | | K182 220/440 v* 550 v | K184 220/440 v* |
| 1 | | K182 208 v 220/440 v* 550 v | | |
| 1 1/2 | K182 220/440 v* 550 v | K184 208 v 220/440 v* 550 v | K184 220/440 v* 550 v | K213 220/440 v* |
| 2 | K184 220/440 v* 550 v | K184 208 v 220/440 v* 550 v | K213 220/440 v* 550 v | K215 220/440 v* |
| 3 | K184 220/440 v* 550 v | K213 208 v 220/440 v* 550 v | K215 220/440 v* | |
| 5 | K213 220/440 v* | K215 208 v 220/440 v* | | |
| 7 1/2 | K215 220/440 v* | | | |

. . . and fast delivery on Sample Motors through 10 hp!

| | | | | |
|-------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|
| 3 | | | | 208 v* K254U 220/440 v* 550 v* |
| 5 | | | 208 v* K254U 220/440 v* 550 v* | 208 v* K256U 220/440 v* 550 v* |
| 7 1/2 | | 208 v* K254U 220/440 v* 550 v* | 208 v* K256U 220/440 v* 550 v* | |
| 10 | 208 v* K254U 220/440 v* 550 v* | 208 v* K256U 220/440 v* 550 v* | | |
| 15 | 208 v* K256U 220/440 v* 550 v* | | | |

* Indicates totally-enclosed motors also available.

All motors obtainable with NEMA "C" face and "D" flange end shields, foot mounted or round frame. Splashproof motors in all ratings.

Motors can also be obtained for 50 cycles.

254 and 256 frames available in high starting torque or high slip NEMA designs C or D, except 3600-rpm motors.

There is Prompt Service on Specials in the above sizes, too! Also new Tri/Clad '55' single-phase motors in many ratings are now in stock.

If you wish the G-E Tri/Clad motor in the original design, they are still available . . . in sizes and ratings listed above and in ratings to 2000 hp.

To get even more recent availability information on standard and special motors, contact your nearest G-E Apparatus Sales Office or G-E motor supplier. General Electric Co., Schenectady 5, N. Y.

648-20

GENERAL  ELECTRIC

For More Information Circle No. 166 on Inquiry Card—Page 17

(Continued from page 132)

ferent from the first only in that it had a newly developed barrier sheet between the steel deck and the roofing material. The barrier kept the hot asphalt from dripping through the deck even when temperatures approached 2000 F. In an actual plant the fire would have remained local and could have been readily brought under control.

The new plastic and asbestos barrier, which is made by the Phillip Carey Manufacturing Co., Cincinnati 15, O., forms a skeletal mat when subjected to intense heat. Consequently, asphalt cannot drip through to help spread fire. It is called Fire-Chex. Available in rolls 38 ft. long and 3 ft. wide, it is applied with a special adhesive. According to the manufacturer, it is less costly than other fire resistant barriers on the market and can be specified for any industrial built-up roof.

Circle No. 41 on Inquiry Card—Page 17

Conveyor Feeding From Two Lines



A simple mechanical unit is available to permit feeding commodities from two conveyor lines into one line, without interference. It will not lock if two boxes contact the arms of the unit at the same time, because the design is such that one commodity will take preference. The device can be successfully used at various converging angles. Arm positions can be changed in the field for use on parallel conveyor lines, various angle converging units and even right angle transfers, using belts, live rollers or gravity conveyors. It will readily handle various commodities weighing from 2 lb on up by merely adjusting a tension feature. Standard Conveyor Co., North St. Paul 9, Minn., make it.

Circle No. 42 on Inquiry Card—Page 17
For More Information Circle No. 167
on Inquiry Card—Page 17→

PURCHASING

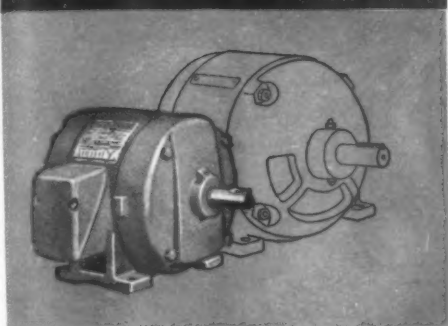
8 reasons why you should MODERNIZE EQUIPMENT WITH **TRI 55 CLAD** MOTORS

REG. U.S. PAT. OFF.

Plan now to modernize your equipment with the all-new General Electric Tri/Clad '55' motor, available now in many ratings; entire line of 1 to 30 hp a-c motors available soon. Contact your G-E Representative. General Electric Company, Section 648-6, Schenectady 5, N. Y.



MORE POWER PER POUND



Lighter and smaller Tri/Clad '55' motors in new NEMA frame sizes and ratings save you space and weight, reduce handling costs.

BUYER PREFERENCE

G-E MOTOR

SUMMARY OF INDEPENDENT MOTOR PREFERENCE SURVEY

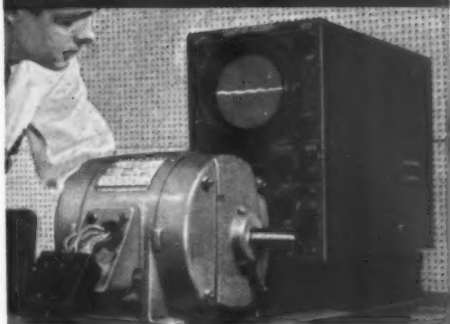
motor A

motor B

motor C

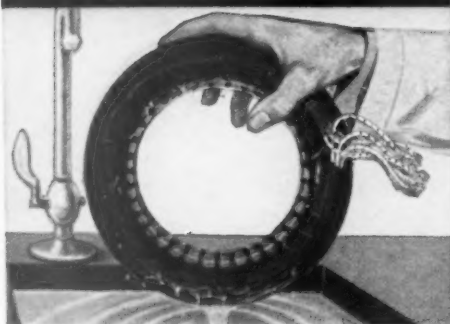
You take advantage of a 2 to 1 buyer preference for the electric motors on your equipment when you buy or specify a G-E motor.

BETTER PERFORMANCE



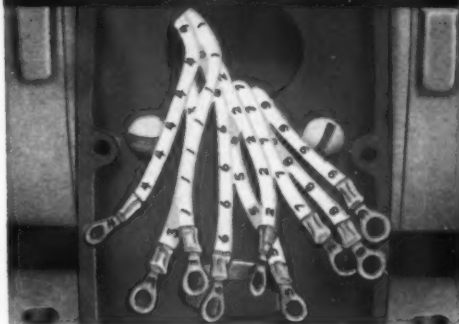
Quieter operation, proved by sound-room tests, is typical of the many performance improvements in the new G-E Tri/Clad '55'.

LONGER LIFE



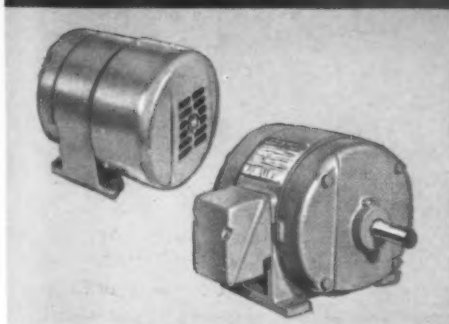
A silicone Dri-film* coating makes insulation shed water—lengthens motor life. Polyester-film insulation is 8 times stronger.

EASIER INSTALLATION

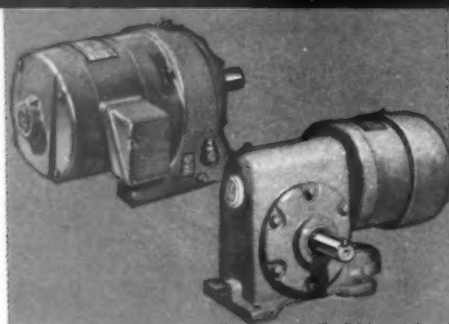


Perma-numbered leads are always instantly read even when wires are taped or clipped. Conduit box has plenty of knuckle room.

COMPLETE LINE OF NEW MOTORS



A complete line of new motors assures the right electrical drive for your machine. Write for Bulletin GEA-6013 on dripproof motors,



GEA-6012, on enclosed motors. For low speed jobs, G.E. offers a complete line of gear-motors. Write for Bulletin GEA-6027.

NEAR-BY SERVICE

CLASSIFIED
Electric Repair Service
— (Continued)
**GENERAL ELECTRIC
SMALL MOTOR SERVICE STATION**
Complete facilities for in and out-of-warranty repair or exchange of A-C and D-C motors and generators to 15 HP. Authorized distributor G-E motor renewal parts and G-E single-phase motors.



"WHERE TO CALL"
AUTHORIZED G-E MOTOR SERVICE
Street Address.....Phone No.

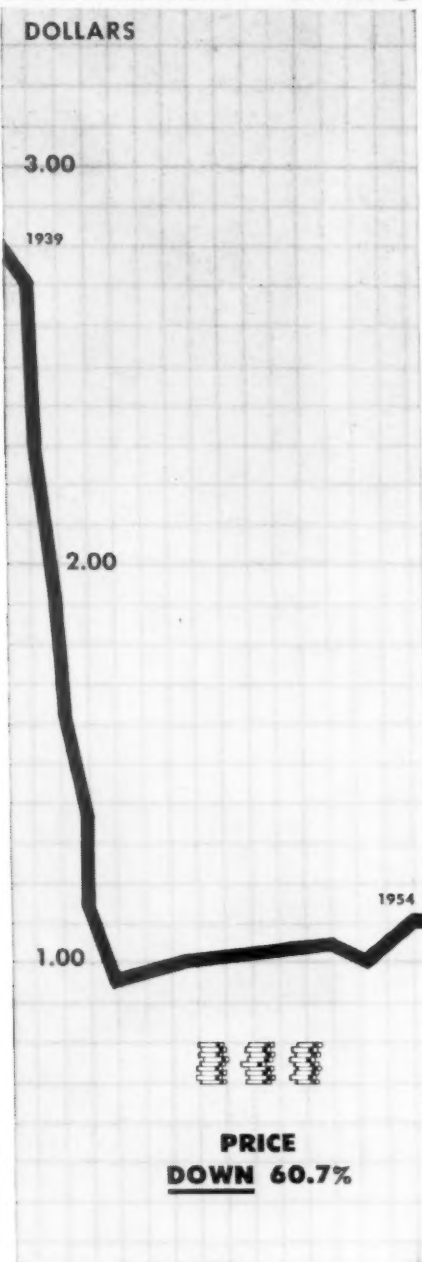
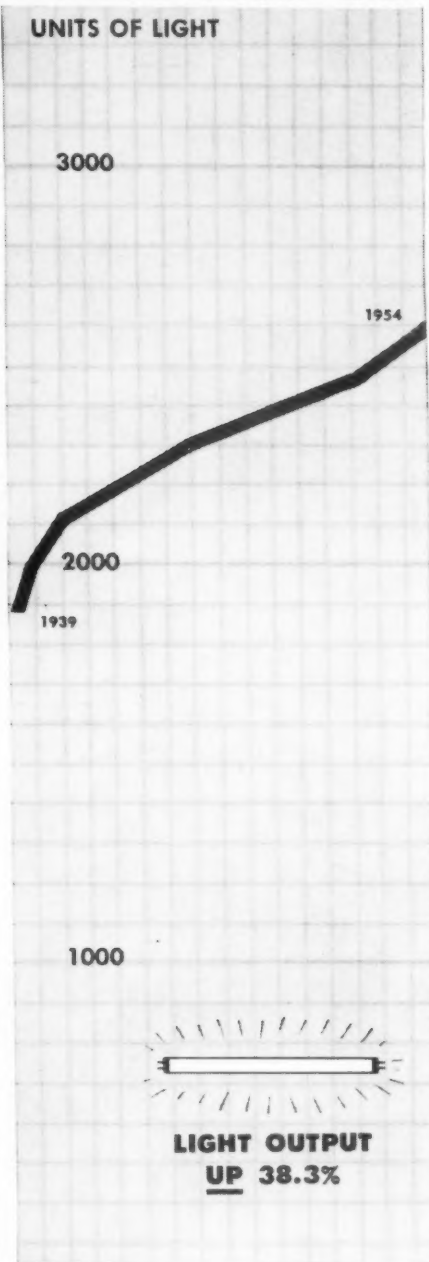
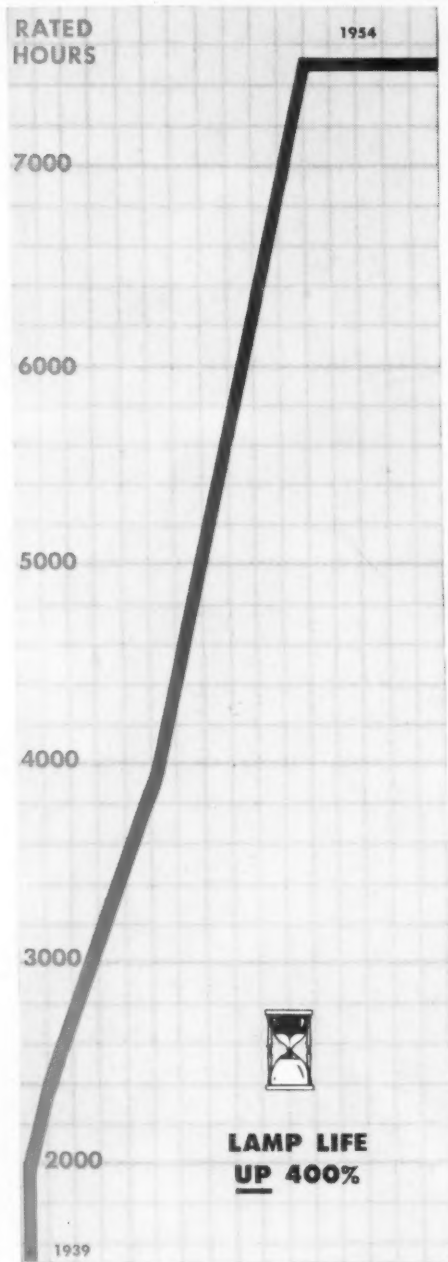
G-E service is as close as your telephone. Authorized motor service stations provide repair-facilities in all major trading areas.

*Reg. trade-mark of General Electric Co.

Progress is our most important product

GENERAL  ELECTRIC

YOU EXPECT THE BEST VALUE FROM G-E FLUORESCENT LAMPS



**16 times more value for
your fluorescent lamp
dollar than in 1939**

Today you don't have to pay more than \$1.10 for the finest fluorescent lamp made: General Electric. Fifteen years ago it would have cost you \$2.80 or \$1.70 more. And while price has been going down, we've been pushing quality up. General Electric has upped light output 38%, increased lamp life 400%.

In terms of what you really judge lamps by, a General Electric 40-watt fluorescent lamp that lists at \$1.10, plus tax, today is a *16-times bigger value than it was in 1939.*

For further information, contact your G-E lamp supplier or write to Lamp Division, General Electric, Department 166-P-10, Cleveland 12, Ohio.



Progress Is Our Most Important Product

GENERAL  ELECTRIC

For More Information Circle No. 167 on Inquiry Card—Page 17

**WELDING IS EASIER
WITH**

HELIARC

Trade-Mark

TORCHES

**WELD ALL THESE
METALS WITHOUT FLUX**

aluminum
magnesium alloys
stainless steel
HASTELLOY alloys
Everdur alloys
cast iron
MULTIMET alloys
brass and bronze
copper
Inconel alloy
mild and low-alloy steel
silicon-copper alloys
nickel and nickel-base alloys
silver and silver-cladding

HIGHEST WELD QUALITY

GREATEST WELDING SPEED

MINIMUM WELD FINISHING



HW-9

for light welding

Air-cooled—
75 amp. a.c.h.f., d.c.s.p.
Electrode sizes:
.020 to 1/16 in.



HW-10

for general welding

Water-cooled—
300 amp. a.c.h.f.,
d.c.s.p., d.c.r.p.
Electrode sizes:
.040 to 1/8 in.



HW-12

**for heavy-duty
welding**

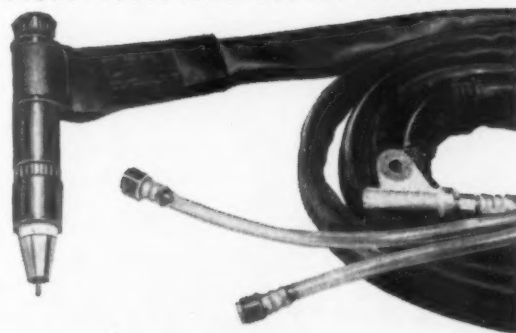
Water-cooled—
500 amp. a.c.h.f.,
d.c.s.p., d.c.r.p.
Electrode sizes:
.040 to 1/4 in.



HW-8

for spot-welding

Water-cooled—
250 amp. a.c.h.f., d.c.s.p.
Electrode sizes:
1/8 to 5/32 in.




HW-13

**for mechanized
welding**

Water-cooled—
500 amp. a.c.h.f., d.c.s.p.
Electrode sizes:
.040 to 1/4 in.

Linde Air Products Company

A Division of Union Carbide and Carbon Corporation

30 East 42nd Street  New York 17, N. Y.

Offices in Other Principal Cities

In Canada: DOMINION OXYGEN COMPANY

Division of Union Carbide Canada Limited, Toronto

"Hastelloy," "Heliarc," "Linde," and "Multimet" are registered trade-marks of Union Carbide and Carbon Corporation.



For More Information Circle No. 168 on Inquiry Card—Page 17

OCTOBER, 1954

139

How LATTICE BRAID*

Teflon[†] Packing

saves Newton Falls Paper Mill, Inc.

\$1,000 a year on one machine



*Registered Trademark. Only Garlock makes LATTICE BRAID rod and shaft packings.

Up to a few years ago, Newton Falls Paper Mill, Inc., Newton Falls, N.Y., used an ordinary flax packing on the agitator shaft of a bleach chest employing liquid chlorine as the bleaching agent. With this flax packing there was a constant leakage of stock and bleach liquor, so Newton Falls decided to try our LATTICE BRAID Teflon Packing. The customer now reports that Garlock LATTICE BRAID: (1) prevents the loss of stock and bleach liquor, (2) has a service life of from 1½ to 2 years. This adds up to savings of \$1,000 per year on one machine.

Put Garlock LATTICE BRAID Packing to work for your company. All the braided strands of this unique packing are lattice linked together into one structural unit. The strands hold together even when the packing is worn far beyond the limits of wear of ordinary braided packings.

LATTICE BRAID is made from flax, cotton, asbestos, wire-inserted asbestos, Teflon, and asbestos with Teflon impregnation—for various types of services.

Get all the facts about LATTICE BRAID packings. Contact your Garlock representative or write for new folder AD-131.

THE GARLOCK PACKING COMPANY, PALMYRA, NEW YORK

Sales Offices and Warehouses: Baltimore • Birmingham • Boston • Buffalo • Chicago • Cincinnati • Cleveland • Denver • Detroit • Houston • Los Angeles • New Orleans • New York City • Palmyra (N.Y.) • Philadelphia • Pittsburgh • Portland (Oregon) • Salt Lake City • San Francisco • St. Louis • Seattle • Spokane • Tulsa.

In Canada: The Garlock Packing Company of Canada Ltd., Toronto, Ont.

† The Du Pont Company's Trademark

GARLOCK

LATTICE BRAID PACKING

For More Information Circle No. 169 on Inquiry Card—Page 17

Copper Louvers Eliminate Damp Rot, Fire Risk

Midget Louver Co., 6 Wall St., Norwalk, Conn. has on the market a line of small sized copper louvers suited for wood, metal, or concrete installations. Designed for weather and termite resistance, they are available in 1", 1½", 2", 2½", 3", 4" and 6" sizes. They are suitable to provide ventilation and moisture vapor control, particularly in anything constructed with the new-type non-porous materials. Their installation not only helps to eliminate damp rot but also prevents fire risk from wire insulation weakened by heat within walls. They have been used by manufacturers of electronic, photographic, sound, air-conditioning and refrigeration equipment, etc.

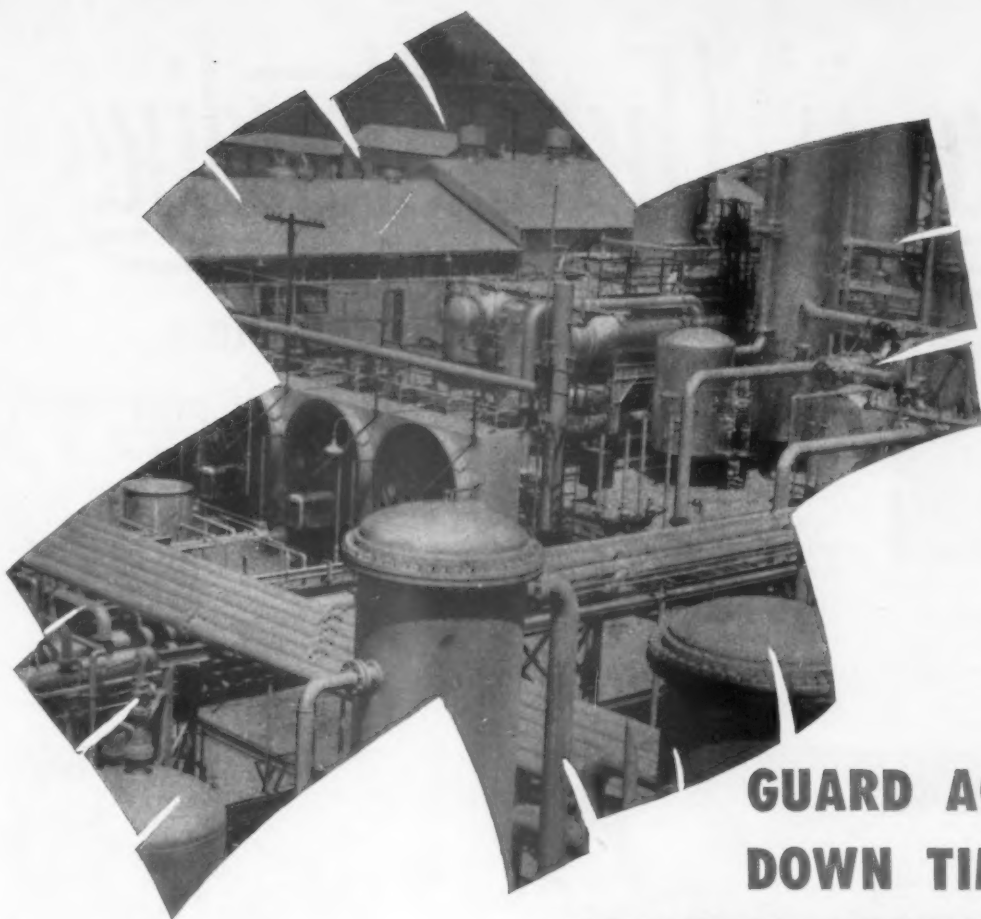
Circle No. 43 on Inquiry Card—Page 17

Non-Locking Caster Won't Jam Even Under Maximum Load



Rolawheel Co., 1757 W. Grand Ave., Chicago, Ill., announces a new type of caster that requires less effort to start, rolls easier, turns and pivots easier and takes bumps and rough surface floors with less vibration and shock than conventional hard wheel casters. A curved axle has dual ball bearings for instantaneous free movement from any starting position. The caster needs no maintenance, and will not pick up or "gather" dirt or lint. It is made of high strength alloy steel with a rust-resistant finish. It is available in standard 1½" and 2½" wheel diameters and with either welded or screw type bearing plate. The casters, it is claimed, will not lock or jam in any position.

Circle No. 44 on Inquiry Card—Page 17



**GUARD AGAINST
DOWN TIME**

WHEN PRESSURES ARE UP

**With Watson-Stillman
Forged Steel Fittings . . .**

The high cost of down time in today's high pressure processing and power plants demands careful selection of piping materials. This goes *double* for the fittings.

WATSON-STILLMAN FORGED STEEL FITTINGS give you maximum protection against high pressure, heat, corrosion, shock and vibration—elements often responsible for piping failures.

All W-S Carbon Steel Fittings are drop forged to produce the well-known forged-fiber structure with exceptionally high tensile and impact strength. They're designed for high strength, too, with extra heavy walls where you need them. And they're precision machined for perfect alignment.

Watson-Stillman Fittings are also available in forged stainless and alloy steels for exceptional service at high and low temperatures and for maximum resistance to corrosion.

For strong, tough, trouble-free joints—for safe, dependable operation of your piping system—specify W-S Forged Steel Fittings. Available in sizes $\frac{1}{2}$ " to 4" in both SCREW-END and SOCKET-WELDING types. Write for information today.

Sold Through Leading Distributors

WATSON-STILLMAN FITTINGS DIVISION

H. K. PORTER COMPANY, INC.

Roselle, New Jersey



Seeing is Understanding

This **SKF** Story Of Spherical Bearing Design Improvement



You'll see how the elimination of flanges and undercuts on the inner ring provides a wider contact area for the rollers.

When **SKF** first announced that its *improved* (Type "C") Spherical Roller Bearing provides, size for size, up to 50% more capacity and 2 to 3½ times longer life than any other available design, most people asked:

"How was this done?"

Your **SKF** District Office has the answer, in the form of a clear, quick *visual* demonstration. Ask to see it—here, in outline, is what you'll see!



You'll see how much longer the Type "C" Rollers are than those in the original **SKF** design.



You'll see the way the rollers are guided by a separate floating guide ring, free to move axially.



You'll see the improved brass window-type cage—see why it's stronger and more effective.



SKF INDUSTRIES, INC.
PHILADELPHIA 32, PA.

YES—We'd like to have an **SKF** Representative **SHOW** us **WHY** the improved **SKF** Type "C" Spherical provides, size for size, more capacity and longer life than any available spherical design.

Name

Company

Address State



You can see an exact comparison of original vs. Type "C" capacity and life in the sizes of sphericals you use.

Mail this coupon **NOW** and **SEE** why you can get better spherical roller bearing performance. No obligation, of course.

SKF INDUSTRIES, INC., PHILA. 32, PA. — manufacturers of **SKF** and **HESS-BRIGHT®** bearings.

7538

ILLINOIS GEARS ...



made right sold right

ILLINOIS GEARS are made right—by skilled craftsmen equipped with the finest machine tools, plus precision inspection and quality control facilities. Our gears are made to your specifications—with careful attention to materials, heat treatment and tolerances.

ILLINOIS GEARS are sold right—all sales are controlled directly from our main offices and works. All ILLINOIS GEAR salesmen are gear specialists with many years of experience in the specification and manufacture of gears of all types. We sell but one product—quality gears.

If you want gears that are made right and sold right—if you demand only the best—if you countenance no compromise with quality—call ILLINOIS GEAR & MACHINE COMPANY.

Look for this mark  —it's the symbol on finer gears

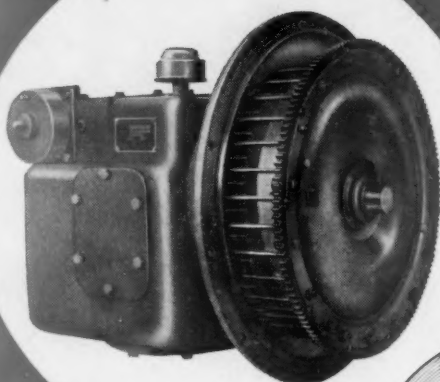


Gears for Every Purpose ... one gear or 10,000 or more

ILLINOIS GEAR & MACHINE COMPANY

2108 NORTH MAYCHEZ AVENUE • CHICAGO 35, ILLINOIS

tomorrow's Transmission TODAY!



AS SIMPLE TO OPERATE AS AN ELECTRIC MOTOR

Anyone can easily operate the new **PGT compound planetary transmission** by merely moving a single hydraulic control lever. With two forward and one reverse speeds, instantaneous selection is possible because the cushion shift action of the **PGT** prevents shock loading. Shift is made from full speed forward to full speed reverse in only 1½ seconds.

CONTROLLED BY HYDRAULIC PRESSURE

The **Plan-Gear Transmission** has two planetary gear assemblies for low and reverse and a multiple disk clutch for direct drive. The planetaries are actuated when hydraulic pressure contracts a band around an anulus or drum to provide the desired movement. A built-in oil pump provides pressure for actuating controls, lubrication, and flow to the torque converter.

The simply designed, sturdily built **Plan-Gear Transmission** has been tested exhaustively and successfully in the field as well as in the laboratory, and has proved superior to other more complex transmissions. If you have need for a transmission with 150 pound-feet continuous input torque, we'd like to discuss the matter with you. Write today for further information.



PGT-150 PLAN-GEAR compound planetary transmission

is rated at 150 pound-feet continuous input torque; self-lubricated, constant duty, for use with torque converter. Standard ratios: high, 1:1; low, 3:1; reverse, 3.2:1; optional reverse, 2.23:1.

Suggested Uses:

- Front end loaders
- Lift trucks
- Earth movers
- Hoists and cranes
- Car pullers
- Slushers
- Machine tools
- Conveyors
- Power take-offs
- Truck mixers



Designed and built exclusively by

AMERICAN GEAR & MFG. CO.

New Avenue, Lemont, Illinois
Phone: Lemont 920

Subsidiary of **BRAD FOOTE GEAR WORKS, INC.**, Cicero 50, Illinois

For More Information Circle No. 173 on Inquiry Card—Page 17

Skin Toughener Promotes Industrial Health

Fungus spores are everywhere. They can't all be killed but it is possible to make the skin resistant to their attack. Onox, Inc., 129 Second St., San Francisco, Calif. claims their skin toughener is the answer to checking the spread of Athlete's Foot in industrial locker rooms. A 16" x 22" sponge rubber footmat is saturated with Onox and placed where men can step on it after coming out of a shower. By walking on the saturated mat daily, individuals toughen their skin and so avoid fungus attack. Safe, sanitary, and effective, Onox is said to cost less than 1¢ per man per week. Circle No. 45 on Inquiry Card—Page 17

New Process Makes for Easy Welding



The Lincoln Electric Co., Cleveland 17, Ohio, has developed a new method of welding, claimed to be as easy as turning on a light switch. The method is expected to be useful for repair shops and other users of metal equipment and machinery that occasionally need a quick, easy method of repair or maintenance. The new method employs a special welding electrode and electrode holder. To make a weld, the tip of the electrode is simply held against the metals to be joined at the point where the weld begins. A switch on the holder is pressed to fire the electrode and the electrode, as the tip is held against the metal, automatically makes the weld.

Circle No. 46 on Inquiry Card—Page 17

**Want more Facts on any of the
products shown in this issue?**

**Get them quickly and easily
by using the
INQUIRY- CARD
PAGE 17**



Not when you use KIMPAK 301!

New KIMPAK 301 is the practical solution to surface damage to furniture finishes during shipment. KIMPAK 301's ability to shield the fine finish against scratching makes it the ideal protective agent in a furniture package. KIMPAK 301 costs no more than ordinary materials. It is specially designed to protect against the major causes of scratching:

1. Abrasiveness of the inner spacers. KIMPAK 301 provides a scratch-free, non-disintegrating, compressible barrier between inner spacers and the furniture finish. Its conformability ensures a snug package.

2. Dust, dirt, cinders that sift into the container. The combination of

high creping and porous structure—exclusive with KIMPAK 301—provides a trap for dirt, grit or cinders, which may lodge between the packaging material and the polished surface.

3. Abrasive action of harsh packaging materials. KIMPAK 301 is soft and non-abrasive . . . free from wood splinters, dirt and other abrasive materials. No lumps, hard glue spots or stiff wrinkles.

Scratching is but *one* of many problems encountered in furniture packaging. These problems are *solved* when new KIMPAK 301 is specified. For more details, contact your local KIMPAK distributor, or mail coupon below.

SPECIFY KIMPAK 301 TO SOLVE THESE INTERIOR PACKAGING PROBLEMS:

Scratching
Pressure-marking
Staining
Chafing
Conformability
Ease of handling
Disintegration

Whatever your protective interior packaging requirements, there is a Kimpak specification that does the job...better!

Kimberly Clark
INTERIOR PACKAGING
KIMPAK 

KIMBERLY-CLARK CORPORATION
Neenah, Wisconsin

We would like to learn how new KIMPAK 301 can provide better protection at lower cost for our products. Please send complete information.

Name

Firm

Street Address

City.....Zone.....State.....



How Do Lightweight Refractories Cut Fuel Costs And Boost Furnace Output?

Here, certainly, is a timely question. There's a heavy squeeze today on most furnace operators for lower costs, larger production . . . or both. And despite all the economies they've put into effect so far, they're still searching hard for ways to make their furnace dollars do a bigger job.



The following discussion brings out a number of facts, often overlooked, about the money-saving, profit-building potentials inherent in *lightweight* insulating firebrick.

Q. First of all, just what do you mean by "lightweight" insulating firebrick?

A. Compared with dense, fireclay brick weighing approximately 7½ to 8½ pounds each, insulating firebrick range from about 4½ pounds down to slightly over 1 pound for various temperature requirements.

Q. What does this light weight have to do with lower production costs?

A. Briefly, heavy furnace linings waste your fuel dollars two ways:

They soak up and store large quantities of heat which are lost when the furnace is cooled; and they conduct and lose too much heat through the wall.

Lightweight insulating firebrick, on the other hand, contain millions of tiny air cells, heat up and cool quickly, absorbing and storing very little heat. Also, they resist heat flow, keeping it inside the furnace to do productive work.

Q. I can see why you would save on fuel — but how much?

A. There's no single answer to that question — there are too many variables to be considered. But to give you an

idea of these savings, here are a few actual examples:

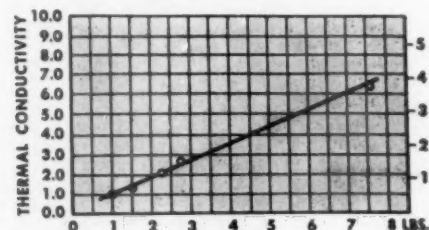
The operator of a large forge furnace cut his fuel costs more than 50% after changing to *lightweight* insulating firebrick.

A manufacturer of electric kilns states that insulating firebrick result in heat savings of fully 25%.

A magnesium melting crucible furnace that formerly used 1,000,000 BTU's per hour now does the same job with 500,000 BTU's, thanks to insulating firebrick.

Q. Increased production has also been pointed out as an advantage of insulating firebrick. How do you explain this?

A. Again the answer lies in lightness of weight. Because lightweight firebrick store and conduct less heat, they come up to operating temperature faster — cool down faster, too. This means — shorter heating cycles.



Relation between weight and thermal conductivity for several brands of kaolin base refractories. (mean temperature, 900F)

Secondly, because lightweight firebrick conduct far less heat than heavy, dense firebrick, you don't have to build as thick a wall. This gives you more hearth area per square foot of floor space.

Thirdly, lightweight firebrick respond more rapidly to changes in furnace heat input, which means closer temperature control and fewer rejects in many instances.

It's just like adding extra furnace capacity without adding to your furnace investment.

Q. Are there any differences in the performance of the various brands of insulating firebrick available?

A. Naturally, the lighter the brick the greater the fuel savings and furnace output. And the lightest insulating firebrick of all, for any temperature range — if you'll pardon our mentioning it — are B&W Insulating Firebrick.

THE BABCOCK & WILCOX CO.
Refractories Division
General Offices:
161 East 42nd St., New York 17, N. Y.
Works: Augusta, Ga.

R-300



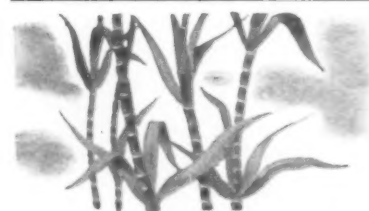
Potatoes?



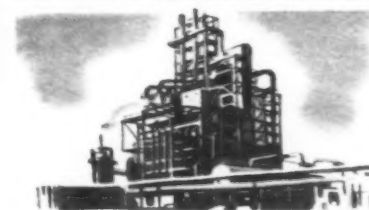
RYE GRAIN ?



BARLEY ?



Sugar Cane ?



Petroleum ?

✓ *Check the largest source
of Ethyl Alcohol*

Right you are if you checked petroleum, for more industrial ethyl alcohol is produced from ethylene gas, a product of petroleum, than from all other sources combined. More than three-quarters of the nation's supply comes from this source.

Industry uses ethyl alcohol in enormous quantities . . . in plastics, drugs, insecticides . . .

in production of hundreds of other products. In aeronautical research, hundreds of pounds of ethyl alcohol are burned in seconds to propel a rocket at twice the speed of sound.

Shell Chemical was the first to develop a one-step process for the commercial manufacture of ethyl alcohol. Today, expanded, its direct hydration plant at Houston contributes a substantial percentage of the national supply.

Shell Chemical Corporation

Chemical Partner of Industry and Agriculture

NEW YORK



Hard-to-Pack Product?

Call a
"General" Container Engineer!

OLD PACKAGING METHOD

It took a heavy nailed wooden box, ten pieces of interior blocking, 71 individually driven nails to prepare this water level control valve for shipment.



"GENERAL ENGINEERED" METHOD

3 steel straps tie valve to specially designed base. Sturdy lightweight wire-bound mat wraps around base. Top is secured by driving just 4 nails.

RESULTS:

PACKING TIME CUT 60%
SHIPPING WEIGHT CUT 10%
CONTAINER COSTS CUT BY \$1,500 TO \$2,000 A YEAR!

Those were the results on *just one item* when Fisher Governor Company of Marshalltown, Iowa, called in a General Container Engineer. Our field engineers, backed by well-staffed, well-equipped laboratories, give you the *best* packaging at the *lowest* cost. *Write for your free copy of "The General Box"—or have one of our engineers call.*

Engineered Containers for every shipping need

Factories: Cincinnati; Denville, N. J.; East St. Louis; Detroit; Kansas City; Louisville; Milwaukee; Prescott, Ark.; Sheboygan; Winchendon, Mass.; General Box Company of Mississippi, Meridian, Miss.; Continental Box Company, Inc., Houston.

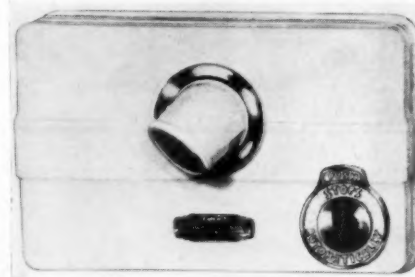
General Box

GENERAL BOX COMPANY, 1843 MINER STREET, DES PLAINES, ILL.



For More Information Circle No. 177 on Inquiry Card—Page 17

Electric Hand Dryer



An electric hand dryer that gives faster drying with an improved heating element and a nozzle which concentrates the air stream from a larger blower than any other dryer is announced by The Chicago Hardware Foundry Co., North Chicago, Ill. A circuit-breaker prevents damage when someone places a hand on the air intake or nozzle. The circuit-breaker shuts off the heating element, but automatically makes contact again when the hand is removed. Of semi-recessed design, the dryer is built to give years of service with its cast iron frame and case in porcelain enamel finish. Circle No. 47 on Inquiry Card—Page 17

Locking Insert Holds Screws Without Washers, Nuts, Wires

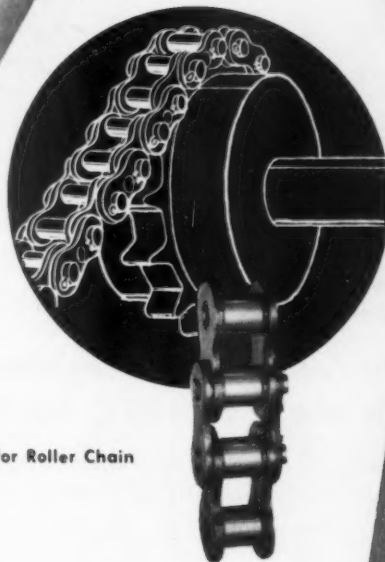


A new one-piece screw thread insert is said to perform three important functions: (1) it automatically locks the screw so that it is vibration-proof, ending the need for lock washers, locking wires or lock nuts; (2) it provides a high-strength thread; (3) it automatically locks itself into the parent material without the use of pins, rings, staking or other devices. Called a "grip-end" insert, it can be easily incorporated into an otherwise frozen design because it requires no more boss material or wall thickness than a conventional tapped thread. It was developed by Heli-Coil Corp., Danbury, Conn.

Circle No. 48 on Inquiry Card—Page 17
PURCHASING



Pressure Cartridge in a
Fire Extinguisher



Rollers for Roller Chain

would you recognize these as tubes?

a better product at less cost can be yours when you recognize
the advantages of using **GLOBE steel tubes!**

TODAY, with cost conscious buyers demanding more for their money, it's your responsibility to develop new and better manufacturing methods. There may be parts of your equipment now forged, cast or machined which can be made better from Globe tubing. Result . . . elimination of costly machining operations, and a part that is made better, faster, and at lower cost.

Why not investigate the possible use of Globe tubing in your product? Globe's "one-source" supply offers seamless carbon, alloy, and stainless tubing in a complete range of sizes and analyses. Globe metallurgists and engineers are available to assist in the proper selection of tubing for your particular job. Write for the Globe General Catalog.

Producers of Globe
seamless stainless
steel tubes — Glo-
weld welded stain-
less steel tubes —
alloy — carbon —
seamless steel tubes
—Globeiron (high-
purity ingot iron)
seamless tubes —
Globe Welding
Fittings

GLOBE
STEEL TUBES CO.

Milwaukee 46, Wisconsin
Chicago • Cleveland • Denver
Detroit • Houston • Los Angeles
New York • Philadelphia
San Francisco
St. Louis

"what a *difference*

AVERY

Kum-Kleen

LABELS

make...

they're pressure-sensitive!



**... can't beat 'em for advertising and informative labeling
—on the *PRODUCT, PACKAGE* or *POINT OF SALE!*"**

Make your products *talk!* Even when there's no salesman around, Avery Kum-Kleen Labels work for you—at the *point of sale!* With fingertip ease they're laid on the product or package to point

out sales features and advantages—information and instructions. They tell your customer what he's buying...why he should buy...and how to use it!

■ For advertising and merchandising work, Avery Pressure-Sensitive Labels put your message right where you want it—on the package, product or on any clean, smooth display surface.

■ Avery Kum-Kleen Labels are on in an instant—with *no moistening* or waste motion. They stick tight and won't dry out, curl or pop off...they stay neat and attractive through rough handling—yet they're easily removed, when necessary, without soaking or scraping!

■ Available in any size, shape or color... they're individually die cut on sheets or in rolls for automatic labeling at production-line speeds. Patented Avery Dispensers, in either manual or electric models, can save you real time and money—write now for more information and free samples of Avery Pressure-Sensitive Labeling—*do it today!*



SPECIFICALLY SPEAKING...

Here are a few practical uses of Avery Kum-Kleen Labels. Where can *your* business use these labels in sales promotional work?

- | | |
|------------------------------|-----------------------------|
| ● trade marks | ● point of sale stickers |
| ● anniversary promotions | ● product information |
| ● product identification | ● special instructions |
| ● guarantees | ● warning labels |
| ● price labels | ● address changes |
| ● diagrams | ● package labels |
| ● servicing instructions | ● contents labels |
| ● sales stickers | ● color coding |
| ● special feature labels | ● maintenance instructions |
| ● special promotion stickers | ● advertising tie-in labels |

AVERY ADHESIVE LABEL CORP., Custom Div. 130

117 Liberty Street, New York 6 • 608 S. Dearborn Street, Chicago 5
1616 S. California Ave., Monrovia, Calif. • Offices in other principal cities

☐ Please send case histories
and free samples

☐ Have the Avery Label
man call

Name _____

Company _____

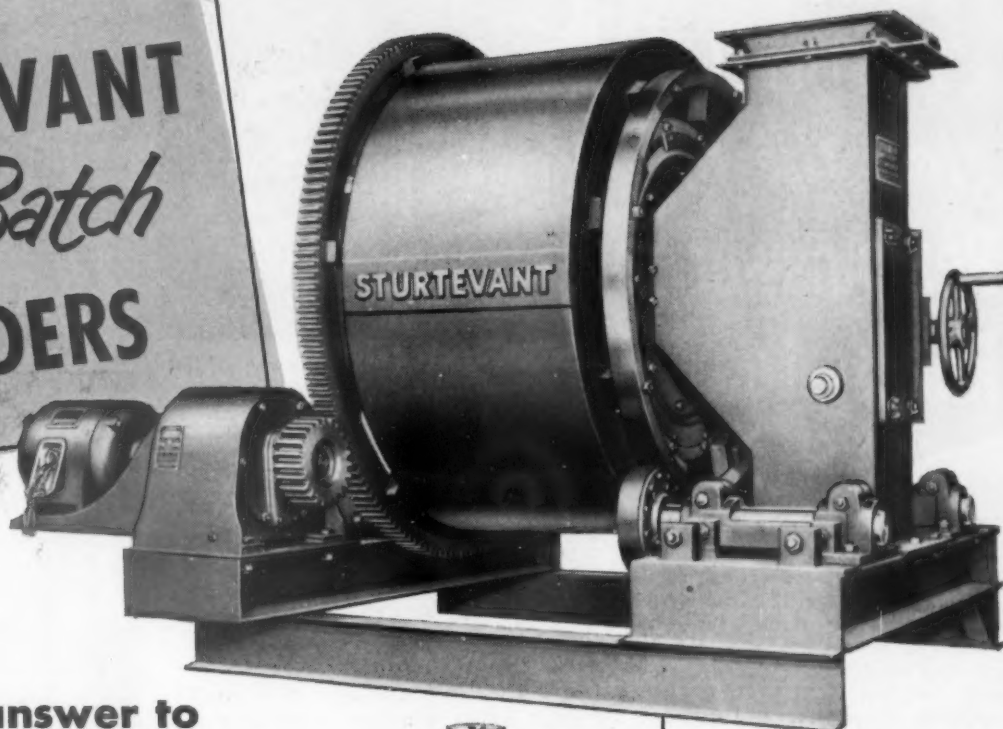
Address _____

Our Business Is _____



AVERY
Kum-Kleen
LABELS

STURTEVANT *Dry Batch* BLENDERS



are the answer to Fast, Economical Mixing

Because of the unique design of its mixing chamber, and the 4-way mixing action which brings two or more substances together, the Sturtevant Dry-Batch Blender does a more rapid mixing job than other machines and, at the same time, it is complete and thorough in every particular. The substances may be of different weights and physical properties, and may be either dry, partly dry, or a mixture of both. Write for bulletin today.

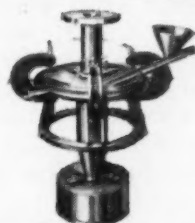
Compare These Advantages

- Only one lever controls both receiving and discharging for simplicity of operation. Hand wheel operates rack and pinion slide at feed opening.
- 4-way mixing action speeds production . . . assures thorough blends.
- "Open-door" accessibility permits easy, fast, thorough cleaning.
- Single aperture drum for both intake and discharge.
- Unusually efficient scoops pick up materials to effect thorough mixing as drum revolves.
- 9 models . . . a size for every job . . . from 10 cu. ft. to 900 cu. ft. batches.

STURTEVANT MILL COMPANY

107 Clayton Street, Boston 22, Mass.

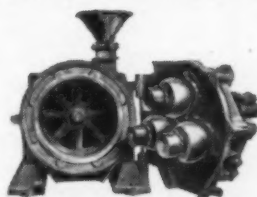
DESIGNERS & MANUFACTURERS OF
CRUSHERS • GRINDERS • SEPARATORS • CONVEYORS
MECHANICAL DENS AND EXCAVATORS • ELEVATORS • MIXERS



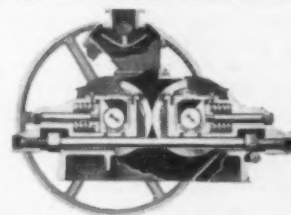
Micronizer® Grinding Machine. A fluid jet grinding machine, the Sturtevant Micronizer speeds reduction of materials to low micron sizes. These jet mills are especially applicable in fields where a particle size in microns is desired. Available for out-right sale.



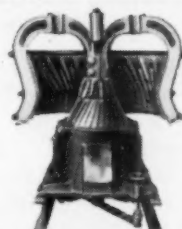
Air Separator — for separation of fines to 325 mesh and finer. Increases output from 25% to 300% . . . lowers power costs by 30%. Capacities ¼ to 50 tons per hour output.



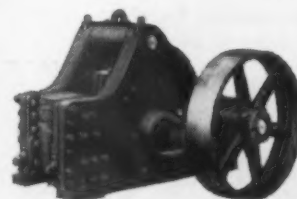
Ring-Roll Mills — for medium and fine reduction (10 to 200 mesh), hard or soft materials. Very durable, small power. Operated in closed circuit with Screen or Air Separator. Open door accessibility. Many sizes. No scrapers, plows, pushers, or shields.



Crushing Rolls — for granulation, coarse or fine, hard or soft materials. Automatic adjustments. Crushing shocks balanced. For dry or wet reduction. Sizes 8 x 5 to 38 x 20. The standard for abrasives.



Rotary Fine Crushers — for intermediate and fine reduction (down to ¼"). Open door accessibility. Soft or moderately hard materials. Efficient granulators. Excellent preliminary Crushers preceding Pulverizers.



Jaw Crushers — for coarse, intermediate and fine reduction of hard or soft substances. Heavy or light duty. Cam and Roller action. Special crushers for Ferro-alloys. Several types, many sizes.

... here's why Turbo Jet gives the first Real Answer to Raking Leaves

The Turbo Jet power leaf mill pulverizes leaves into a fine, granular chaff that makes an excellent, easy-to-use mulch—but that's only part of the story. Where Turbo Jet really proves to be a big money-saver in grounds maintenance is in dramatically SPEEDING UP LEAF REMOVAL through its novel "two-way action." Turbo Jet—

1. Cleans up leaves in its path through its intake opening, and
2. Moves an even greater area of leaves into a windrow at the same time through the blower action of its discharge air stream, enabling the operator to clear leaves from lawns in swaths up to 8 or 10 feet wide.

And thanks to this unique, patented design, Turbo Jet can get leaves out of the most inaccessible places—from around fences, curbs, walls, shrubbery—all the places where leaves naturally collect! Even gets leaves out of ivy and myrtle beds! TURBO JET ELIMINATES THE HAND-RAKING FUNCTION ENTIRELY—AND THAT'S WHERE YOU MAKE THE BIG SAVINGS! It's not too late to put this money-saving machine to work for you this fall—write TODAY for information.

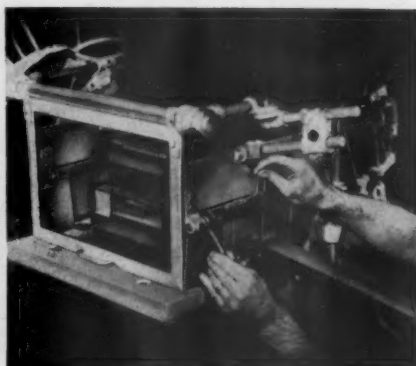
TURBO JET MFG. CO.

22 Bowman Terrace
Cincinnati 29, Ohio



For More Information Circle No. 181
on Inquiry Card—Page 17

Punch Press Safety



Punch press operators get added protection from an air-controlled die enclosure for punch presses limited to primary operations. The enclosure features complete safety, faster set-up, easier die change, reduced fatigue and unobstructed view. In operation, the strong transparent window of the die enclosure is quickly opened to allow fast, easy changes or to adjust stock. The manufacturer, American All-safe Co., Inc., Buffalo, N.Y., states that, while window is open, press cannot be tripped. Opening the window automatically cuts off the air supply to the foot pedal and clutch cylinder by action of the cam operated valve.

Circle No. 49 on Inquiry Card—Page 17

New Rust Remover

Turco Products, Inc., 6135 S. Central Ave., Los Angeles 1, Calif., has developed a non-acid rust removing material that strips paint, rust and primer from ferrous metal surfaces. The liquid alkaline material requires only two simple steps—a dip and a pressure rinse. It makes it possible to eliminate elaborate multi-tank installations. Parts to be de-rusted and stripped of paint and primer are merely immersed into a hot tank of the compound, withdrawn, and then rinsed with air-and-water or with steam. There is no need for after-neutralizing.

Circle No. 50 on Inquiry Card—Page 17

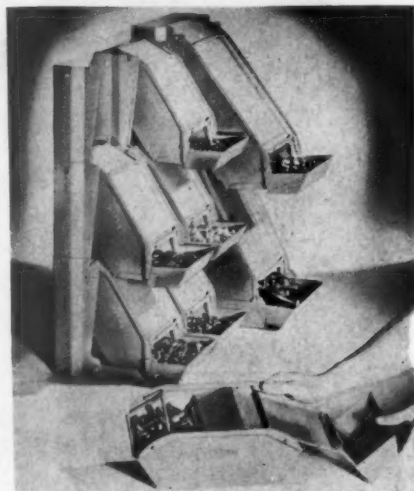
Boring Tool Permits Easy Adjustment and Clamping

Many improved features have been incorporated by the Portage Double Quick Tool Co., 1052 Sweitzer Ave., Akron 11, Ohio, in a "quick change" micrometer boring tool just placed on the market. The micrometer-adjusting screw is completely enclosed and thus protected from dirt and metal chips. Also, the tool bit is posi-

tioned from a seat that is also protected and enclosed in the bar itself. A lock screw releases the wedge clamp. When the clamp is loosened, a spring insures positive action between the wedge and tool bit. This keeps the tool bit from turning when the dial is being adjusted. Tool adjustment and clamping can be made with one hand.

Circle No. 51 on Inquiry Card—Page 17

Hopper Rack Avoids Parts Rehandling at Assembly



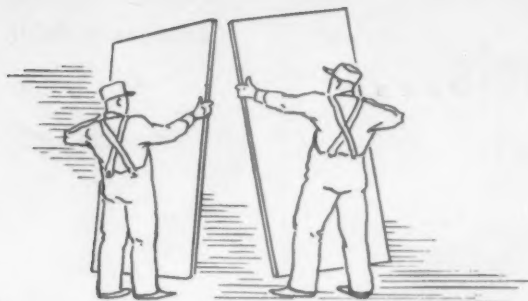
A rack and lid combination is announced that converts standard NesTier materials handling boxes into small parts hoppers for use in assembly and production operations. It eliminates rehandling of parts at assembly area, provides a constant supply of readily accessible parts at worker's fingertips, permitting rapid replacement of empty units. It also simplifies job of keeping work stations supplied, and facilitates inventory control. The manufacturer is Chas. Wm. Doepke Mfg. Co., Inc., NesTier Div., 8899 Blue Ash Rd., Rossmoynne, Ohio.

Circle No. 52 on Inquiry Card—Page 17

New Lighting Units Feature Safety, Low Maintenance Costs

Swivelier Co., Inc., 43-34th St., Brooklyn 32, N. Y., has a line of 17 adjustable incandescent and fluorescent lighting units designed for industrial and commercial applications. The line called "Dextra-Lites," features extra safety factors and lower maintenance costs. All models are made with spring-tension socket and swivels, which afford maximum adjustability, withstand heavy vibrations and stay put at any angle.

Circle No. 53 on Inquiry Card—Page 17



Have you a similar fastening problem?

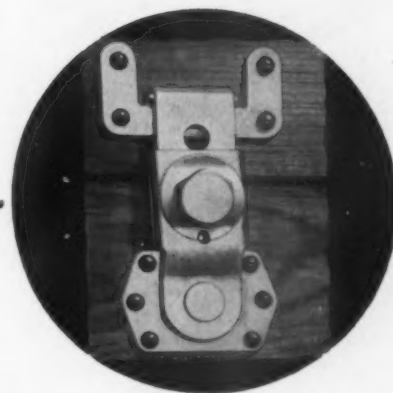
How a strong structure can be designed for speedy and simple assembly with unskilled labor, no special tools...



The U. S. Air Force wanted a jet-aircraft hangar design that would be portable by air, yet strong; would assemble quickly; be interchangeable, and flexible enough for easy structure modification.

The answer lay in a panel structure using modular units. Armormply honeycomb panels faced with thin aluminum, developed by United States Plywood Corporation, provide lightness, strength, flexibility. Joining one panel to the other in the field with untrained help was a problem until Simmons Fastener developed LINK-LOCK, a simple latching device that operates with minimum wrench pressure on hex nut.

This fastening problem is being successfully met by combining the design ingenuity of No. 1 LINK-LOCK with the proved performance of honeycomb plywood panels.



No. 1 LINK-LOCK—like No. 2 LINK-LOCK—features simplicity, positive action, high strength.

No springs are used in No. 1 LINK-LOCK. Locking action is obtained by rotating a nut that moves a sliding latch in and out of position. Up to 1500-lb. pull-down pressure is available; the device carries up to 4000-lb. tension. No. 1 LINK-LOCKS provide for surface mounting, simplifying installation.

Where can you use it? When you need heavy fastening pressures, resistance to impact, operation in 70-below temperatures—and where ease of action, compactness, and low cost are important factors. Write for a No. 1 LINK-LOCK Data Sheet.

SIMMONS FASTENER CORPORATION
1743 No. Broadway, Albany 1, New York

Simmons

LINK-LOCK
QUICK-LOCK
SPRING-LOCK
ROTO-LOCK

FASTENERS THAT IMPROVE PRODUCTS AND REDUCE ASSEMBLY COSTS

For More Information Circle No. 182 on Inquiry Card—Page 17

with **KEX** wiping towels...

**I BUY WIPES—
NOT WEIGHT**



"I decided long ago to stop buying scrap rags and waste by the pound and switch to Kex wiping towels because a lot of the stuff we were getting wasn't usable. It had no uniformity and the men had to pick and choose the right piece for every job. That isn't true with Kex—every square inch is usable.

"After the first few months of using Kex Service my month-end cost for wipers was down substantially! The men have a uniformly-sized, absorbent towel for every job. And we don't run the risk of scratching or damaging delicate precision machinery."



YOU DON'T BUY A THING—just pay a low monthly rental. Kex towels are distributed nationally—for complete information, see your Classified Telephone Directory for nearest Kex distributor, or write Kex National Service, 295 Fifth Avenue, New York 16, N. Y.

**"KEX" NATIONAL
SERVICE**

REG. U.S. PAT. OFF.



It isn't Kex unless it's imprinted with the Kex name

For More Information Circle No. 183 on Inquiry Card—Page 17

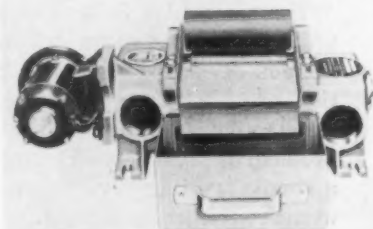
Aluminum Cable Adapter



Interchangeable use of aluminum and copper electrical conductor in switch and control equipment is now possible, says The Thomas & Betts Co., Elizabeth, N. J. It has developed a new connecting device for #4 and #2 stranded aluminum cable. The adapter, manufactured from special tin-plated copper alloy, has different properties than standard copper alloy connectors. This is to compensate for the fact that aluminum has greater thermal expansion than copper, and is covered with an oxide coating that must be penetrated to form a good electrical connection. Also, the standard copper connector produces galvanic corrosion of the aluminum conductor.

Circle No. 54 on Inquiry Card—Page 17

Separator Automatically Cleans Liquid Coolants



The Houdaille magnetic separator introduced by Honan Crane Corp., Lebanon, Ind., filters out ferrous metallic particles from coolants and cutting oils. It is a small compact unit (10 gpm soluble oil model: 20" x 7 7/8" x 6 1/2") that operates continuously to provide constant clean coolant supply for all types of machine tools. Separator can be installed on the machine tool sump. Contaminants are removed by permanent magnets completely en-

(Please turn to page 156)

They thought they needed 3 trucks

... but Yale showed them the one Truck that did all 3 jobs

The experience of many firms shows what can be done in your own plant. For one YALE Truck . . . with the proper Yale attachments . . . can do virtually every lifting, moving, and stacking job . . . easily, efficiently, and economically. And, every Truck in the complete YALE line can quickly be fitted with the use-extending attachments that your operation requires.

You can now acquire the YALE equipment you need without delay and without major investment under YALE's flexible "3-Way-Finance-Plan." Ask your local YALE representative for details. Or mail the coupon today.

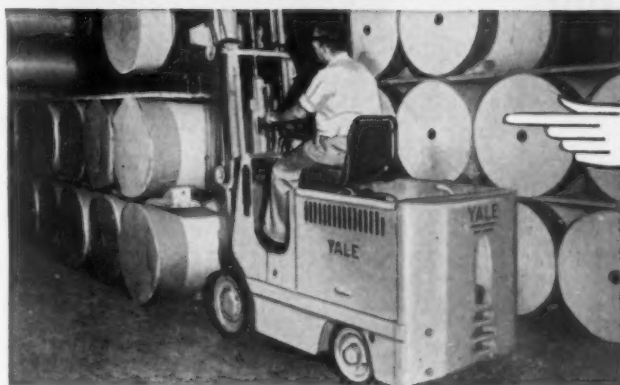
YALE MAGNETIC CAM-O-TACTOR—a time-delay speed controller with exclusive features no other controller can match—provides smooth acceleration, long contact life, trouble-free operation.

1. A host of handling jobs like the one illustrated require no special attachments . . . can be economically performed by the YALE Electric Truck alone.
2. The revolving clamping device on this YALE Electric Truck handles huge paper rolls with tender care. Rolls can be stacked either flat or up-ended.
3. Handling large, bulky units is no problem for the Electric Truck and clamping device. Like all YALE attachments—it's installed or removed in minutes.

YALE*

INDUSTRIAL LIFT TRUCKS AND HOISTS

*Reg. U. S. Pat. Off.



MAIL THIS COUPON TODAY

The **YALE & TOWNE** Manufacturing Co., Dept. 2510

11000 Roosevelt Blvd., Phila. 15, Pa.

Please send me further information on.

- ☐ YALE Trucks and Attachments;
☐ YALE "3-Way-Finance-Plan"
☐ YALE Magnetic Cam-O-Tactor

Company _____

Name _____ Title _____

Street _____ City _____ State _____

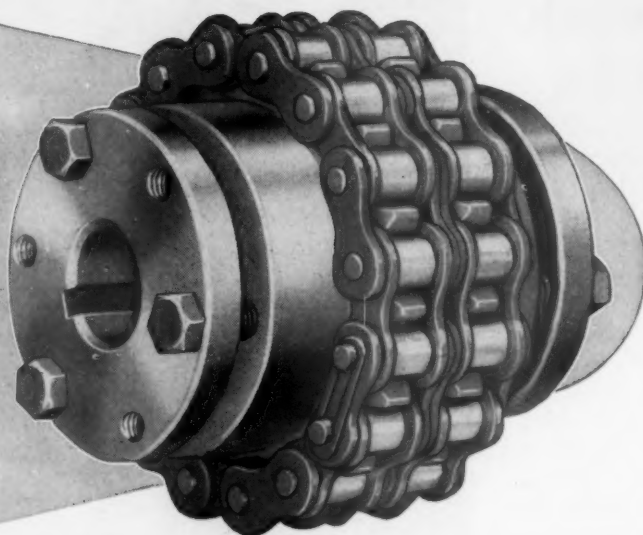
In Canada write: The Yale & Towne Manufacturing Company
 St. Catharines, Ontario, Canada

Gas, Electric, Diesel & LP-Gas Industrial Trucks • Worksavers • Hand Trucks • Hand & Electric Hoists • Pul-Lifts

Browning's

NEW CHAIN COUPLING

Strong
as the
shaft
itself!



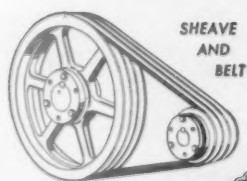
USES SPLIT TAPER BUSHING SYSTEM

no re boring • simple assembly • individually packaged

Browning's chain coupling with pearlitic malleable sprockets, hardened teeth and standard roller chain provides maximum capacity and longer life. Employs same split taper compression bushing used in other Browning power transmission products. Choice of 10 sizes, 123 bores, 235 combinations, from stock. Ask for Catalog V169 and name of Browning distributor near you.

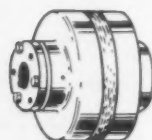
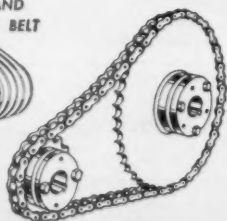
Browning's Interchangeable Bushing System

... saves time and money

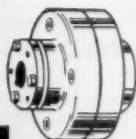


SHEAVE
AND
BELT

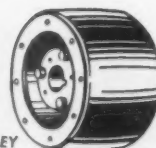
CHAIN AND
SPROCKET



FLEXIBLE
COUPLING



RIGID
COUPLING



PAPER PULLEY

Browning

MANUFACTURING COMPANY
MAYSVILLE, KENTUCKY

(Continued from page 154)

closed in a revolving cylinder. Cylinder is driven by a 1/70 hp (4.8 rpm) motor. The separator is available in 10 and 20 gpm capacities for soluble oils and 5 and 10 gpm for mineral oils.

Circle No. 55 on Inquiry Card—Page 17

Fasteners Are Easy to Position, Draw Down



Substantial reductions in assembly time and materials handling are claimed for a line of tandem-type nuts. Produced in coil or strip form with a partial shear between each nut for fast, simple detachment, these "fasteners with a handle" completely eliminate production line slowdowns due to dropped or misplaced parts. Interchangeable for No's 6-8-10 and 14Z screws, the nuts are available in coils or strips of any desired lengths. Designed for making power-driven attachments with type A or B (Z) sheet metal screws, the fasteners are easy to hold and use and provide double locking attachment. They are manufactured by Tinnerman Products Inc., Cleveland, Ohio.

Circle No. 56 on Inquiry Card—Page 17

Impregnated Buffs Last 30% Longer

In metal finishing buffing wheels, the buff is impregnated with the same organic material that is used as a binder in buffing compounds. The lubrication provided by this material greatly reduces frictional wear and tends to make the buff more flexible during operation. Tests have shown that the softer impregnated buffs wear as well on the last inch as the first. Forming a natural bond between buff and cutting compound, the impregnated binder also permits thread ends to retain the binderizing organic material in larger quantity. As a result of more compound being carried, these buffs not only last longer but also cut faster. They are made by Hanson-Van Winkle-Munning Co., Matawan, N.J.

Circle No. 57 on Inquiry Card—Page 17

For More Information Circle No. 186
on Inquiry Card—Page 17→

PURCHASING



NEW!

TUBE-TURN Full-Encirclement Saddle improves "hot-tapping" of piping

SAFER, STRONGER "hot taps" are now made possible by the TUBE-TURN Full-Encirclement Saddle shown above. This new product is the first of a group of important developments of Tube Turns' unique pulsation pressure testing program.

Split longitudinally on a horizontal plane, perpendicular to the axis of the outlet, this new "hot tapping" reinforcement eliminates welds in the critical crotch area. Its installation requires a minimum amount of field welding. When used with high yield strength pipe, no welds are required between saddle and line pipe.

The TUBE-TURN Full-Encirclement Saddle is designed for high yield strength thin-wall pipe and for heavy wall cylinders used for headers, bottles and pulsation dampeners. It can be supplied for pipe sizes through 42", any outlet size, in composition and wall thickness to match service conditions.

The Leading Manufacturer of Welding Fittings and Flanges

TUBE TURNS

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KENTUCKY**

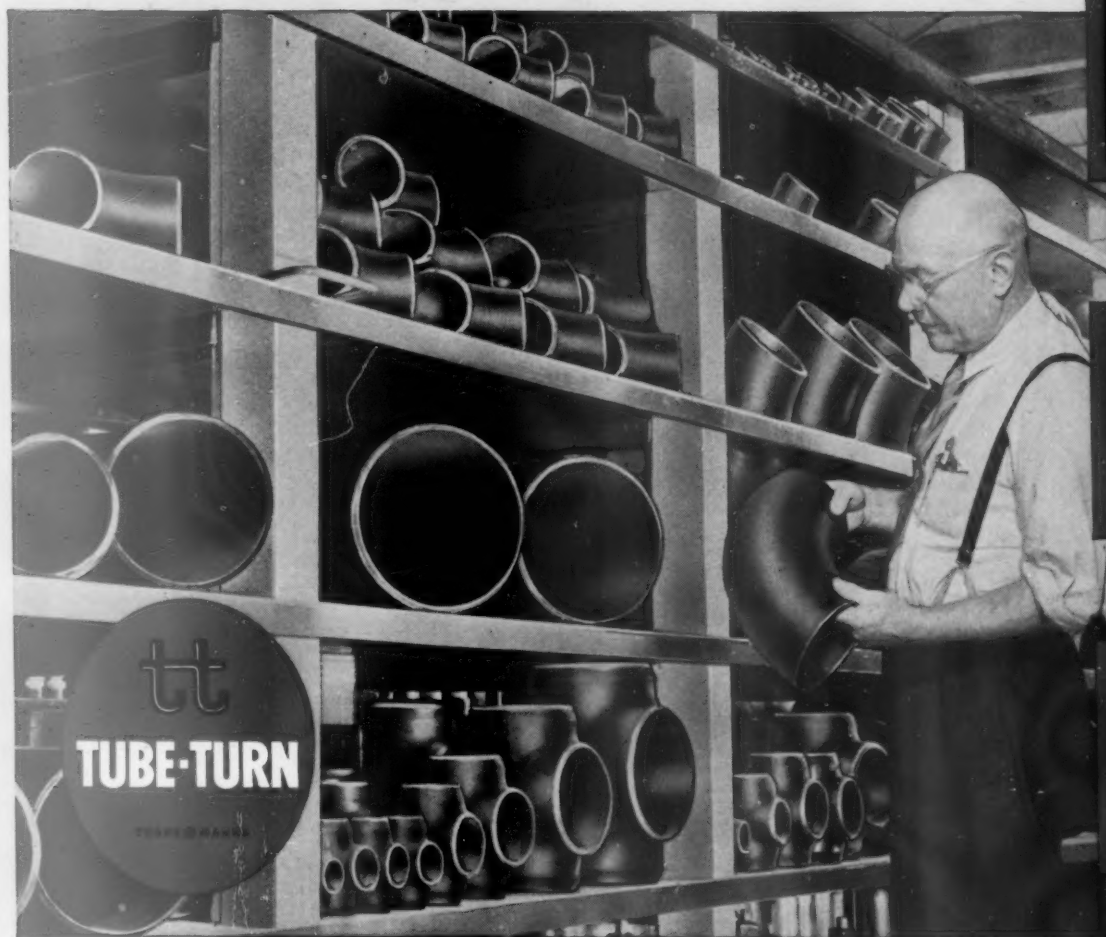
A Division of National Cylinder Gas Company

DISTRICT OFFICES: New York • Philadelphia • Pittsburgh • Cleveland • Chicago • Denver • Los Angeles
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**"tt" and
"TUBE-TURN"**
Reg. U.S.
Pat. Off.

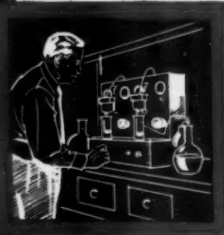
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WHY IT PAYS
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LEADER



Tube Turns' nearby complete stock SAVES YOUR PURCHASING TIME.



Tube Turns' pioneering research GIVES YOU ADVANCED PRODUCTS.

TUBE TURNS' pioneering research gives you *more for your money*

YOU ARE SURE to get the latest cost-saving developments in fittings and flanges when you specify "TUBE-TURN". Year after year since introducing forged welding fittings in the U. S., Tube Turns has consistently set the pace in research, quality control, development of new types, sizes and materials and in piping engineering.

This product leadership represents another important saving to you when you specify TUBE-TURN Welding Fittings and Flanges. Order them from your nearby Tube Turns' distributor. This one reliable source can fill all your requirements promptly from the world's most complete line.



Tube Turns' engineering help GIVES YOU COST-CUTTING IDEAS.



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The Leading Manufacturer of Welding Fittings and Flanges

TUBE TURNS

LOUISVILLE 1,
KENTUCKY

A Division of National Cylinder Gas Company

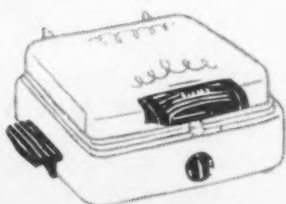
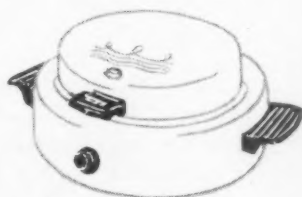
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hold on to sales appeal

WITH HANDLES BY KURZ-KASCH



KURZ-KASCH "handles"
other Dominion Products, too!



The handle's your customer's first contact with your product. Many times the sale can be made—or lost—at this crucial moment. Your designers know how to design sales appeal into a handle. Help them hold on to their design by bringing it to Kurz-Kasch.

Dominion Electric Corporation does. Over the past few years, Dominion has repeatedly turned to Kurz-Kasch for their custom phenolic handles. From coffeemakers to wafflebakers and sandwich grills, Dominion found K-K engineers able, ready and willing to engineer and mould phenolic handles—light, low cost, with heat insulation aplenty and lots of sales appeal!

To boost your sales appeal, let Kurz-Kasch "handle" your product. Write, wire or phone today for more complete information concerning K-K custom moulding.

KURZ-KASCH

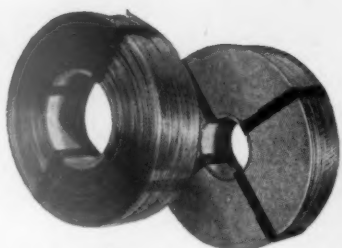
Specialists in Thermo-Setting Plastics for 37 years

Kurz-Kasch, Inc. • 1431 S. Broadway • Dayton 1, Ohio

BRANCH SALES OFFICES: New York, Mt. Vernon MO 4-4866 • Rochester, Hillside 4352 • Chicago, Merrimac 7-1830 • Detroit, Jordan 6-0743 • Philadelphia, Hilltop 6-6472 • Dallas, Logan 5234 • Los Angeles, Richmond 7-5384 • St. Louis, Parkview 5-9577 • Atlanta, Exchange 0414 • Toronto, Riverdale 3511.

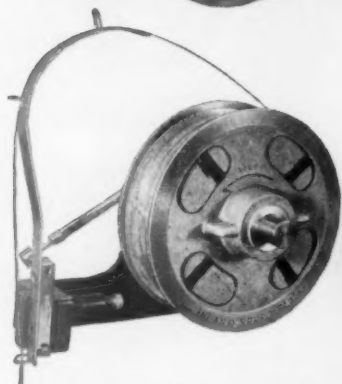
EXPORT OFFICE: 89 Broad St., New York City, Bowling Green 9-7751.

For More Information Circle No. 187 on Inquiry Card—Page 17



The Combination for Your Stitching Problems

INLAND
SPEED-FLO
STITCHING WIRE
(25 Lb. Coils)



INLAND
25 Lb. Controlled
Stitching Wire
SPOOL

Fits all makes of machines.
Every inch of wire is used. The
Inland 25 Lb. spool is automatic—
all-metal — equal to a lifetime of
hard service. SpeedFlo Wire also
available in 5, 10 and 50 lb. coils.

is unequalled for
faster, better, and
trouble-free stitching
at lowest cost!

Save time, wire and temper! Ask about this combination without obligation

INLAND WIRE PRODUCTS CO.

3742 South Lowe Avenue

Chicago 9, Illinois

For More Information Circle No. 188 on Inquiry Card—Page 17

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of standard and special
washers for all types of
industrial applications.

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For More Information Circle No. 189
on Inquiry Card—Page 17

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**...EXCELLENT FACILITIES
for PICKLING & OILING**

Our Record: Over 50 years of
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to manufacturers and fabrica-
tors of iron and steel products
... any size or shape, any size
order from the smallest to the
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ENTERPRISE"**

**ENTERPRISE
GALVANIZING CO.**

2519 E. CUMBERLAND STREET
PHILADELPHIA 25, PENNSYLVANIA

For More Information Circle No. 190
on Inquiry Card—Page 17

Silicone Water-Repellent Prolongs Masonry Life

A silicone water-repellent, that may be applied by brush or spray, is claimed by the maker, Silicone Products Dept., General Electric, Pittsfield, Mass., to be capable of more effective performance on common brick than any previous available material. It is stated that independent laboratory test results indicate that common brick treated with the silicone product will only absorb 0.01% moisture after being immersed in water for a one-week period. Since rain splashes and runs off silicone treated surfaces, carrying away dirt deposits, exterior surfaces are kept clean for a longer period of time. Thus the product, besides prolonging masonry life, also reduces maintenance costs.

Circle No. 58 on Inquiry Card—Page 17

All-Mesh Locker Stays Drier, More Sanitary



An all mesh locker provides maximum natural ventilation through $\frac{3}{4}$ " diamond-shaped openings in its 14-gage expanded steel sides, back and door. Sturdy as a solid steel locker, this all-mesh unit prevents concealment of unauthorized or pilfered items. It is available in 15 single tier sizes and 10 double tier sizes and is furnished with coat hooks, number plates and choice of locks. Manufacturer is Penn Metal Corp. of Pa., 50 Oregon Ave., Philadelphia 40, Pa.

Circle No. 59 on Inquiry Card—Page 17

**YOU CAN GET MORE INFORMATION
ON ANY ITEM SHOWN IN THIS
ISSUE. JUST USE THE
INQUIRY CARD
PAGE 17**

MAINTENANCE MEN PREFER
O-B VALVES FOR . . .

FAST heating EASY soldering

● O-B bronze valves for copper-to-copper installation have been made especially heavy where weight counts...in the body and centerpiece. But on tubing ends, where extra strength is not needed, excess metal has been trimmed away. When a torch flame is applied to the ends, they heat quickly and evenly to the right soldering temperature. Solder flows readily around the tubing, making a neat, leaktight joint.

Ohio Brass offers copper-to-copper valves at 125 pounds working steam pressure and lower in both globes and gates. Gates feature the self-adjusting Flexitite Disc®; globes have the free swiveling disc holder that eliminates grinding of the disc against seat. Your Ohio Brass distributor stocks these copper-to-copper valves together with other high quality O-B bronze valves.

Ohio Brass Company
Mansfield, Ohio



With excess metal
trimmed away, ta-
per tubing ends
heat faster.



Ohio Brass Valves

BRONZE GLOBES, ANGLES, GATES AND CHECKS FOR
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CHROM



YOU HAVE A CHOICE OF 3

SIMPLEX low-carbon ferrochrome—containing maximum 0.010% or maximum 0.025% carbon. Available with silicon contents of 5.00 to 7.00% or maximum 1.50%.

SIMPLEX nitrogen-bearing, low-carbon ferrochrome—in 2% and 5% nitrogen grades.

Low-carbon ferrochrome—with carbon grades ranging from 0.02 to 2.00% maximum.

Nitrogen-bearing, low-carbon ferrochrome—with grades containing 0.75 to 2.00% nitrogen.

High-carbon ferrochrome—with carbon grades ranging from 3.00 to 7.00% maximum.

Low-chromium, high-carbon ferrochrome—in maximum 5.00% and maximum 6.00% carbon grades.

High-carbon ferrochrome—of 7.00% minimum carbon content.

"SM" ferrochrome—containing 4.00 to 6.00% carbon.

Exothermic ferrochrome and exothermic silicon-chrome.

Ferrochrome-silicon.

Ferrosilicon-chrome.

Electrolytic chromium metal—with minimum chromium content of 99.00%.

Foundry ferrochrome—high- and low-carbon grades.

Chromium briquets—each containing 2 pounds of chromium.

The terms "Electromet," "Simplex," and "SM" are trade-marks of Union Carbide and Carbon Corporation.



OF 35 GRADES

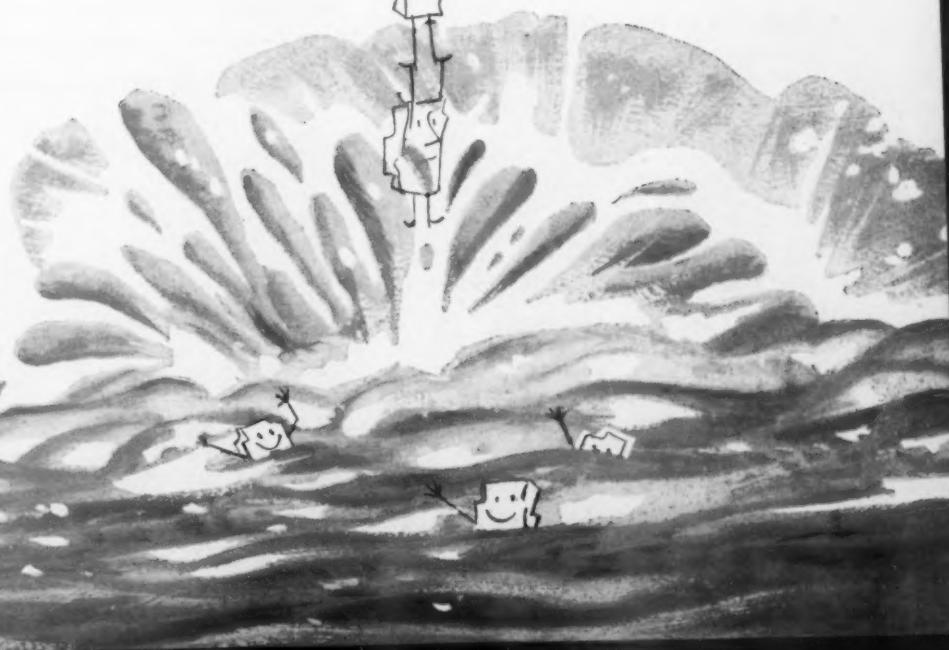
From no other source can you get as many types of chromium products. ELECTROMET has 35 different grades, and each is designed to do a specific job. Let one of our metallurgists advise on the grade best suited to your needs. He will be glad to assist you with any problems that you have on the production, fabrication, or use of quality steels, irons, and non-ferrous metals. Write or phone one of our offices, located in the principal steelmaking centers.

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Get better acquainted with OILITE Products.

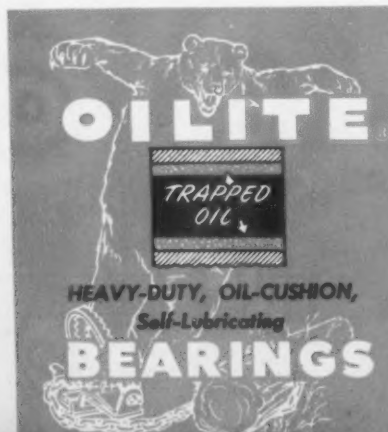
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OILITE PRODUCTS include: Bearings, Finished Machine Parts, Cored and Solid Bars, Permanent Filters and Special Units of Non-Ferrous and Ferrous Metals and Alloys.

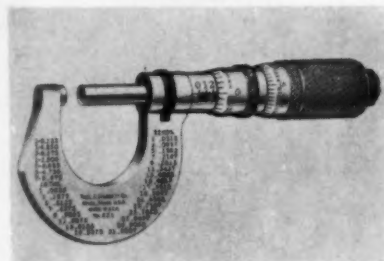


New Combination Gages

Ardec, Inc., Media, Pa., says that a total range of .708" to 2.835" is possible with just six adjustable "Go" and "No Go" gages. They replace hundreds of conventional plug gages. The gages can be set quickly with micrometer indicator, or Johansson block, depending on accuracy required. Each gage has long jaws similar to solid "Go" and "No Go" plug gages to permit straight entering. Blind holes can be measured to their full length as easily as through holes. After a gage is set, it can be locked and wax-sealed to prevent tampering.

Circle No. 60 on Inquiry Card—Page 17

Micrometer Reads Direct to 1/10,000"



A micrometer caliper that enables anyone to measure with the speed and accuracy of an experienced gagemaker is announced by The L. S. Starrett Co., Athol, Mass. It reads direct in ten-thousandths of an inch, with no Vernier to decipher. It also makes every measurement with exactly the right spindle pressure—there is no relying on "feel." Accuracy throughout the range of the micrometer is within .00005". Range is 0" to 1".

Circle No. 61 on Inquiry Card—Page 17

Pre-Phosphating Metal Cleaner

Development of a pre-phosphating metal cleaner to be used in mechanical spray processing equipment, which is relatively neutral and contains no metallic activator, is announced by Detrex Corp., Chemical Process Div., Detroit 32, Mich. The cleaner was specifically designed for use in spray phosphate coating units where a fine-grained phosphate crystal is required. By accomplishing the activating process without resorting to metal activators, the product leaves the metal surface chemically clean and requires no surface seeding in the pre-phosphate coating stages. Subsequent phosphate coatings are extremely fine grained, uniformly coated and, thereby, result in lower chemical consumption.

Circle No. 62 on Inquiry Card—Page 17

For More Information Circle No. 193
—on Inquiry Card—Page 17

LOOK TO THE LEADER...
FOR LUBRICATING DEVICES

GITS



40 YEARS' LEADERSHIP

Yes, for 40 years GITS has been setting the standard for industry . . . solving tough lubricating problems . . . earning the confidence of manufacturers . . . it's the reason people say, "Call GITS first".



LOW COST

Yes, GITS oil cups can do a complete lubricating job for you . . . prolonging bearing life, reducing maintenance costs, cutting down-time, boosting production . . . and GITS oil cups cost so little.

WORLD'S LARGEST SELECTION

Yes, only GITS can offer you such a wide range of standard stock sizes. From *just one* source you can get *all* lubrication devices in *any design* for *any purpose*.



CONSISTENT TOP QUALITY

Yes, GITS is known for uniform quality in design, materials and machining . . . this means constant, dependable performance for you. Inferior products can cost you time and money. Demand the best . . . get GITS.



Oil Hole Covers • Oil Cups • Grease Cups • Bottle Oilers • Gauges • Gravity-Feed • Wick-Feed
Constant Level • Vibrating Rod Styles • Threaded or Drive-Type • Elbow or Straight

GITS **BROS. MFG. CO.**
1865 S. Kilbourn Ave. Chicago 23, Ill.

Write today for Free Catalog No. 60A. Use it as your handy reference for lubricating devices.

JADE-LITES SPEED PRODUCTION AT PHILADELPHIA THERMOMETER CO.

Lustra Jade-Lite Fluorescent Tubes reduce glare, eyestrain, reports General Mgr. L. W. Scanlan

PHILADELPHIA, PA.—The Philadelphia Thermometer Company in this city has discovered a simple new way to speed production, according to L. W. Scanlan, General Manager.

The new method consists of a Lustra Jade-Lite lighting system recently installed in the production department in place of the formerly used slimline and fluorescent tubes. "The old lighting system," says Mr. Scanlan, "caused an annoying amount of glare. At the suggestion of our local Lustra man, we installed Lustra Jade-Lite Fluorescent Tubes and immediately both glare and eyestrain were substantially reduced, with the end result that production has been substantially speeded."



THE LUSTRA JADE-LITE. Reports from the Philadelphia Thermometer Company and other industries throughout the country, indicate its superiority for precision work.

AFTER CONFERRING WITH A LUSTRA MAN, the Philadelphia Thermometer Company decided to replace ordinary slimline and fluorescent tubes in production department with Lustra Jade-Lites. Result was elimination of eyestrain, speed-up of production.

Lustra Corporation reports similar results with their lighting in plants throughout the country and makes this statement to all plant-men: "You can definitely improve lighting efficiency and production in your operation with the Lustra Lighting Line."

For information write: Lustra Corp., Dept. P-10, 111 Water Street, Brooklyn 1, N. Y.



For More Information Circle No. 195 on Inquiry Card—Page 17

Preventive Maintenance Magnetic Inspection Kit

A portable kit (weighs less than 30 lb) is available for preventive maintenance inspection, for weld inspection, or for limited volume inspection of any magnetic part wherever surface cracks are suspected. The kit consists of a magnetizing and testing yoke which, in inspection, covers an area of approximately 24 sq. in., dusting powder, powder bulbs and operating instructions. The yoke is equipped with a 100 ft cord and draws only 6 amps from any 110 v a-c line. Because it uses a-c magnetization no confusing subsurface indications will be developed. The kit is available from Magnaflux Corp., 7300 Lawrence Ave., Chicago 31, Ill.

Circle No. 63 on Inquiry Card—Page 17

Hardness Tester Makes Up to 1200 Tests an Hour



A fully automatic "Rockwell" hardness tester is said to be suitable for quality control tests of the hardness of all metal, ferrous and non-ferrous. Operating on the same principle as the hand-operated tester it is capable, according to the manufacturers, Wilson Mechanical Instrument Div., American Chain & Cable Co., Inc., 929 Connecticut Ave., Bridgeport 2, Conn., of performing 1000-1200 tests per hour. Manual testers average 200-400 tests in the same period. Classifying is done by means of photo-electric units mounted on the bezel rings of the dial gage. These units may be set so that hardness limits as close as 2 points may be controlled.

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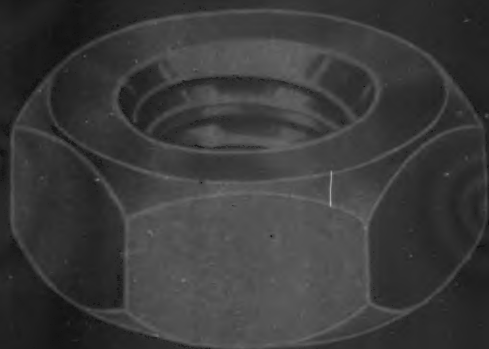
QUICK—CONVENIENT
Use the Inquiry Card on
Page 17 for additional
information on any product

For More Information Circle No. 196
on Inquiry Card—Page 17→

PURCHASING

Tear out along this line . . . Save for your file . . . Price Info on reverse side.

NOW ...get
Famous Fischer
PRICES



Famous Fischer
PRECISION
in

ALUMINUM NUTS

Turned Products Since 1905

"Fischer Turned"

BIG BENEFITS ARE YOURS! 49 years of turned, brass nut experience backs up the quality . . . 49 years of highly developed skills and nut manufacturing techniques enables "Fischer Turned" Aluminum Nuts to be sold at cost-cutting competitive prices. See for yourself! Compare Features! Compare Prices! You will quickly agree for PRECISION, PRICE and DELIVERY you want "Fischer Turned" ALUMINUM NUTS!

ALUMINUM NUTS give you these features!

A PLEASANT PRICE SURPRISE! Check the price list on the other side of this sheet. You'll find Fischer proves again precision doesn't cost extra . . . that you build better for less when you specify and order "Fischer Turned" Aluminum Nuts.



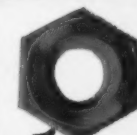
**TAPPED
SQUARE
WITH FACE**



**BOTH SIDES
COUNTER-
SUNK**



**CLASS 2
THREADS**



**CLEAN—
DEGREASED**

FISCHER SPECIAL MFG. CO., CINCINNATI 6, OHIO

BELL SYSTEM TELETYPEWRITER CI-448-U WESTERN
UNION—TFI TELEPHONE WOODBURN 1280

**IMPORTANT PRICE DATA
GIVEN ON REVERSE SIDE**

TEAR OUT, COMPARE WITH YOUR PRESENT COSTS!

"Fischer Turned"

HEXAGON ALUMINUM MACHINE SCREW NUTS

| Thread Size | Dimensions | Type | Amer. Std. B18.2 Unified 1952 | Fischer Part Number | Net Price 1,000—Not Burnished | | | | | | | | Bright Burnish Extra Per M. Min. Charge \$3.50 Lot Item | Approx. Weight Lbs. Per 1,000 |
|-------------|-------------|------|-------------------------------|---------------------|-------------------------------|--------------|-------------|------------|------------|-----------|----------|--------------|---|-------------------------------|
| | | | | | 200M Or More | 100M To 200M | 50M To 100M | 25M To 50M | 10M To 25M | 5M To 10M | 1M To 5M | Less Than 1M | | |
| 4-36 | 1/4 x 9/32 | D.C. | Mch. Screw Nut | A2-16802 | 1.56 | 1.61 | 1.67 | 1.78 | 1.92 | 2.18 | 2.50 | 3.12 | 0.05 | 0.40 |
| 4-40 | 1/4 x 9/32 | D.C. | Mch. Screw Nut | A2-16803 | " | " | " | " | " | " | " | " | 0.05 | 0.40 |
| 4-48 | 1/4 x 9/32 | D.C. | Mch. Screw Nut | A2-16804 | " | " | " | " | " | " | " | " | 0.05 | 0.40 |
| 5-40 | 5/16 x 7/64 | D.C. | Mch. Screw Nut | A2-20806 | 1.96 | 2.02 | 2.10 | 2.23 | 2.41 | 2.74 | 3.14 | 3.92 | 0.08 | 0.77 |
| 5-44 | 5/16 x 7/64 | D.C. | Mch. Screw Nut | A2-20807 | " | " | " | " | " | " | " | " | 0.08 | 0.77 |
| 6-32 | 5/16 x 7/64 | D.C. | Mch. Screw Nut | A2-20802 | " | " | " | " | " | " | " | " | 0.08 | 0.74 |
| 6-40 | 5/16 x 7/64 | D.C. | Mch. Screw Nut | A2-20803 | " | " | " | " | " | " | " | " | 0.08 | 0.74 |
| 8-32 | 7/32 x 1/8 | D.C. | Mch. Screw Nut | A2-22802 | 2.36 | 2.43 | 2.53 | 2.69 | 2.90 | 3.30 | 3.78 | 4.72 | 0.10 | 1.00 |
| 8-36 | 7/32 x 1/8 | D.C. | Mch. Screw Nut | A2-22803 | " | " | " | " | " | " | " | " | 0.10 | 1.00 |
| 10-24 | 3/8 x 1/8 | D.C. | Mch. Screw Nut | A2-24804 | 2.42 | 2.49 | 2.59 | 2.76 | 2.98 | 3.39 | 3.87 | 4.84 | 0.12 | 1.20 |
| 10-32 | 3/8 x 1/8 | D.C. | Mch. Screw Nut | A2-24805 | " | " | " | " | " | " | " | " | 0.12 | 1.20 |
| 12-24 | 7/16 x 9/32 | S.C. | Mch. Screw Nut | A1-28809 | 4.29 | 4.42 | 4.59 | 4.89 | 5.28 | 6.01 | 6.86 | 8.58 | 0.19 | 2.00 |
| 12-28 | 7/16 x 9/32 | S.C. | Mch. Screw Nut | A1-28810 | " | " | " | " | " | " | " | " | 0.19 | 2.00 |
| 1/4-20 | 7/16 x 7/16 | S.C. | Mch. Screw Nut | A1-28803 | 4.65 | 4.79 | 4.98 | 5.30 | 5.72 | 6.51 | 7.44 | 9.30 | 0.23 | 2.27 |
| 1/4-24 | 7/16 x 7/16 | S.C. | Mch. Screw Nut | A1-28804 | " | " | " | " | " | " | " | " | 0.23 | 2.27 |
| 1/4-28 | 7/16 x 7/16 | S.C. | Mch. Screw Nut | A1-28805 | " | " | " | " | " | " | " | " | 0.23 | 2.27 |
| 5/16-18 | 9/16 x 7/32 | S.C. | Mch. Screw Nut | A1-36802 | 7.27 | 7.49 | 7.78 | 8.29 | 8.94 | 10.18 | 11.63 | 14.54 | 0.47 | 4.30 |
| 5/16-24 | 9/16 x 7/32 | S.C. | Mch. Screw Nut | A1-36803 | " | " | " | " | " | " | " | " | 0.47 | 4.30 |
| 3/8-16 | 5/8 x 1/4 | S.C. | Mch. Screw Nut | A1-40801 | 9.78 | 10.07 | 10.46 | 11.15 | 12.03 | 13.69 | 15.65 | 19.56 | 0.59 | 5.84 |
| 3/8-24 | 5/8 x 1/4 | S.C. | Mch. Screw Nut | A1-40802 | " | " | " | " | " | " | " | " | 0.59 | 5.84 |

HEXAGON ALUMINUM CAP NUTS

| Thread Size | Width Across Flats | Total Length | Tap Depth | Fischer Part Number | Net Price 1,000—Not Burnished | | | | | | | | Bright Burnish Extra Per M. Min. Charge \$3.50 Lot Item | Approx. Weight Lbs. Per 1,000 |
|-------------|--------------------|--------------|-----------|---------------------|-------------------------------|--------------|-------------|------------|------------|-----------|----------|--------------|---|-------------------------------|
| | | | | | 200M Or More | 100M To 200M | 50M To 100M | 25M To 50M | 10M To 25M | 5M To 10M | 1M To 5M | Less Than 1M | | |
| 4-36 | 1/4 | 1/4 | 5/32 | A7-16805 | 4.19 | 4.29 | 4.39 | 4.59 | 5.19 | 6.19 | 14.19 | 19.19 | 0.10 | 0.90 |
| 6-32 | 5/16 | 9/32 | 3/16 | A7-20804 | 4.19 | 4.29 | 4.39 | 4.59 | 5.19 | 6.19 | 14.19 | 19.19 | 0.15 | 1.50 |
| 8-32 | 5/16 | 9/32 | 3/16 | A7-20805 | " | " | " | " | " | " | " | " | 0.15 | 1.37 |
| 10-24 | 3/8 | 11/32 | 7/32 | A7-24806 | 5.76 | 5.86 | 5.96 | 6.16 | 6.76 | 7.76 | 15.76 | 20.76 | 0.27 | 2.43 |
| 10-32 | 3/8 | 11/32 | 7/32 | A7-24807 | " | " | " | " | " | " | " | " | 0.27 | 2.43 |
| 12-24 | 3/8 | 11/32 | 7/32 | A7-24808 | " | " | " | " | " | " | " | " | 0.27 | 2.27 |
| 1/4-20 | 7/16 | 3/8 | 7/32 | A7-28806 | 7.43 | 7.53 | 7.63 | 7.83 | 8.43 | 9.43 | 17.43 | 22.43 | 0.38 | 3.35 |
| 1/4-28 | 7/16 | 3/8 | 1/4 | A7-28807 | " | " | " | " | " | " | " | " | 0.38 | 3.35 |
| 5/16-18 | 9/16 | 7/16 | 9/32 | A7-36804 | 12.55 | 12.65 | 12.75 | 12.95 | 13.55 | 14.55 | 22.55 | 27.55 | 0.65 | 6.50 |
| 5/16-24 | 9/16 | 7/16 | 9/32 | A7-36805 | " | " | " | " | " | " | " | " | 0.65 | 6.50 |
| 3/8-16 | 5/8 | 1/2 | 5/16 | A7-40803 | 17.65 | 17.75 | 17.85 | 18.05 | 18.65 | 19.65 | 27.65 | 32.65 | 0.85 | 8.50 |
| 3/8-24 | 5/8 | 1/2 | 5/16 | A7-40804 | " | " | " | " | " | " | " | " | 0.85 | 8.50 |

HEXAGON ALUMINUM OPEN-END CAP NUTS

| Thread Size | Width Across Flats | Total Length | Fischer Part Number | Net Price 1,000—Not Burnished | | | | | | | | Bright Burnish Extra Per M. Min. Charge \$3.50 Lot Item | Approx. Weight Lbs. Per 1,000 |
|-------------|--------------------|--------------|---------------------|-------------------------------|--------------|-------------|------------|------------|-----------|----------|--------------|---|-------------------------------|
| | | | | 200M Or More | 100M To 200M | 50M To 100M | 25M To 50M | 10M To 25M | 5M To 10M | 1M To 5M | Less Than 1M | | |
| 4-36 | 1/4 | 15/64 | A8-16806 | 3.85 | 3.95 | 4.05 | 4.25 | 4.85 | 5.85 | 13.85 | 18.85 | 0.10 | 0.90 |
| 6-32 | 5/16 | 1/4 | A8-20809 | 3.85 | 3.95 | 4.05 | 4.25 | 4.85 | 5.85 | 13.85 | 18.85 | 0.15 | 1.40 |
| 8-32 | 5/16 | 1/4 | A8-20810 | " | " | " | " | " | " | " | " | 0.15 | 1.40 |
| 10-24 | 3/8 | 9/32 | A8-24817 | 5.46 | 5.56 | 5.66 | 5.86 | 6.46 | 7.46 | 15.46 | 20.46 | 0.27 | 2.20 |
| 10-32 | 3/8 | 9/32 | A8-24818 | " | " | " | " | " | " | " | " | 0.27 | 2.20 |
| 12-24 | 3/8 | 9/32 | A8-24819 | " | " | " | " | " | " | " | " | 0.27 | 2.20 |
| 1/4-20 | 7/16 | 21/64 | A8-28817 | 7.08 | 7.18 | 7.28 | 7.48 | 8.08 | 9.08 | 17.08 | 22.08 | 0.38 | 3.33 |
| 1/4-28 | 7/16 | 21/64 | A8-28818 | " | " | " | " | " | " | " | " | 0.38 | 3.33 |
| 5/16-18 | 9/16 | 3/8 | A8-36806 | 12.10 | 12.20 | 12.30 | 12.50 | 13.10 | 14.10 | 22.10 | 27.10 | 0.65 | 6.15 |
| 5/16-24 | 9/16 | 3/8 | A8-36807 | " | " | " | " | " | " | " | " | 0.65 | 6.15 |
| 3/8-16 | 5/8 | 27/64 | A8-40805 | 16.60 | 16.70 | 16.80 | 17.00 | 17.60 | 18.60 | 26.60 | 31.60 | 0.85 | 8.33 |
| 3/8-24 | 5/8 | 27/64 | A8-40806 | " | " | " | " | " | " | " | " | 0.85 | 8.33 |

PRICES — 500,000 OR MORE — ONE SIZE — ON APPLICATION

PRICES — NET — Orders subject to prices effective when shipped.

F.O.B. — Cincinnati, Ohio. Full freight paid on shipments of 200 lbs. or more, within continental United States and Canada. We reserve the right to ship via cheapest route. No allowance on shipments of less than 200 lbs.

TERMS — Net cash 30 Days. 1% cash discount on invoices dated from 1st to 15th inclusive, if paid on or before 25th of same month; invoices dated from 16th to 31st inclusive, if paid by 10th of following month.

ASSORTED SIZES — Group all items in this (and brass nut price list) for quantity prices when ordered in lots of 5,000 or more of a size. Grouped orders of assorted sizes are for firm delivery only.

Minimum Charges — \$5.00 per item, plus minimum bright burnishing charge \$3.50 per item, when applicable.

Fischer SPECIAL MFG. CO.

446 MORGAN STREET • CINCINNATI 6, OHIO

Western Union — TFI

Bell System Teletypewriter — CI-448-U

Telephone WOodburn 1280

"Mirror, mirror on my car...
you're the handsomest, by far!"

It takes foresight (and hindsight, too) to make a life-bright rear-sight mirror. Experience (sometimes sad) shows there's nothing like Brass... good, *solid* Bristol Brass... for the frame and backing. No other non-corrosive metal is so easy to work. And no other metal takes such a smooth, impervious finish... a finish which, in turn, takes a plate that remains brilliant for the life of the car.

Yes, the *solid base* of several quality car-mirrors is *Bristol Brass* which gives the manufacturer uniform *working* qualities... and gives the user uniform *lasting* qualities. And you... whether you make mirrors or magnetos, or any other product that can profit by using Brass... make sure you get *Brass at Its Best*... which means Brass strip, rod, and wire from the modern mills here in Bristol.

THE BRISTOL BRASS
CORPORATION

has been making Brass strip, rod and wire here in Bristol, Connecticut since 1850, and has offices and warehouses in Albany, Boston, Buffalo, Chicago, Cleveland, Detroit, Milwaukee, New York, Philadelphia, Providence, Rochester, Syracuse. The Bristol Brass Corporation of California, 1217 East 6th St., Los Angeles 21. The Bristol Brass Corporation of Ohio, 1607 Broadway, Dayton.

"Bristol-Fashion" means **Brass at its Best**

For More Information Circle No. 197 on Inquiry Card—Page 17

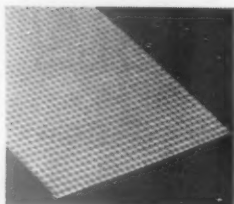
**If you use protective
packaging of any type,
in any quantity . . .**

LOROCO OFFERS YOU SPECIAL ADVANTAGES!



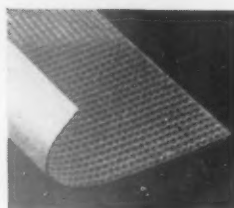
LORODENT PACKING PADS

Prevent scratches, scrapes . . . extra strong, flexible, shock-absorbing. Your choice in number of plies, type of outerwrap.



IMPROVED INTERLEAF LORODENT

Perfect internal packaging for nesting fragile and expensive merchandise. Also makes a good protective covering for highly polished and easily marred surfaces.



LINED FLEXIBLE LORODENT

Lined wall gives added strength, springier texture. Ideal for packaging a wide range of products, from baby bottles to water heaters. Makes fine self package, too. Available in rolls, sheets, sleeves, tubes.

See how LORODENT can save you time...money!

COMPLETE LINE. There's a Lorodent protective material to fit your packaging needs exactly. Compare and choose from the complete Lorodent line . . . all ideal materials for packaging a wide range of products. Fill your needs quicker, easier, from one supply source. Combine shipments to earn lower rates.

REALLY COMPETITIVE PRICE. Because of these added features, you may imagine Lorodent expensive. Far from it! Prices are most moderate, extremely competitive. All we ask is the chance to prove to you how really competitive Lorodent prices are!

Find out today how you can give your merchandise maximum protection at minimum cost with Lorodent Packaging Materials.

Write, wire or phone for samples and prices.

PACKING PADS • LINED FLEXIBLE LORODENT • IMPROVED INTERLEAF LORODENT

LOROCO

INDUSTRIES, INC. • READING, CINCINNATI 15, OHIO

For More Information Circle No. 198 on Inquiry Card—Page 17

Also Noted . . .

Powdered iron bearings and structural parts are now available from Johnson Bronze Co., 450 South Mill St., New Castle, Pa. While there are several standard ASTM specifications, special combinations are available providing there is quantity of a size. The low-cost bearings are said to feature good resistance to pounding and wear, self-lubrication and close tolerance.

Circle No. 65 on Inquiry Card—Page 17

Featuring a steel segmented type of cage that provides sufficient strength and accuracy to retain and guide the crowned rollers at high speed, **roller bearings** manufactured by Lipe-Rollway Corp., Syracuse, N.Y., absorb any normal end thrust pressures imposed by the drive to which a motor is coupled. In addition it locates the motor rotor shaft in its relation to the stator.

Circle No. 66 on Inquiry Card—Page 17

Browne & Sharpe Mfg. Co., Providence 1, R.I., has on the market three new **non-glaring steel rules** in chrome finish. They are designed to meet the demand for units that are easier to read, as well as rust resistant and long wearing. One rule is 6" long, graduated in 16ths, 32nds, and 64ths; the other two are 6" and 12" long respectively, both graduated in 8ths, 16ths, 42nds and 64ths.

Circle No. 67 on Inquiry Card—Page 17

High-shear C-130AM **titanium alloy rivets** offer a 40% weight saving over the same rivets in alloy steel. Pheoll Mfg. Co., Aviation Div., 5720 Roosevelt Rd., Chicago 50, Ill., manufacture them and claim they have a minimum shear strength of 95,000 psi and can replace the high-heat-treat alloy high-shear rivets without decreasing structural strength.

Circle No. 68 on Inquiry Card—Page 17

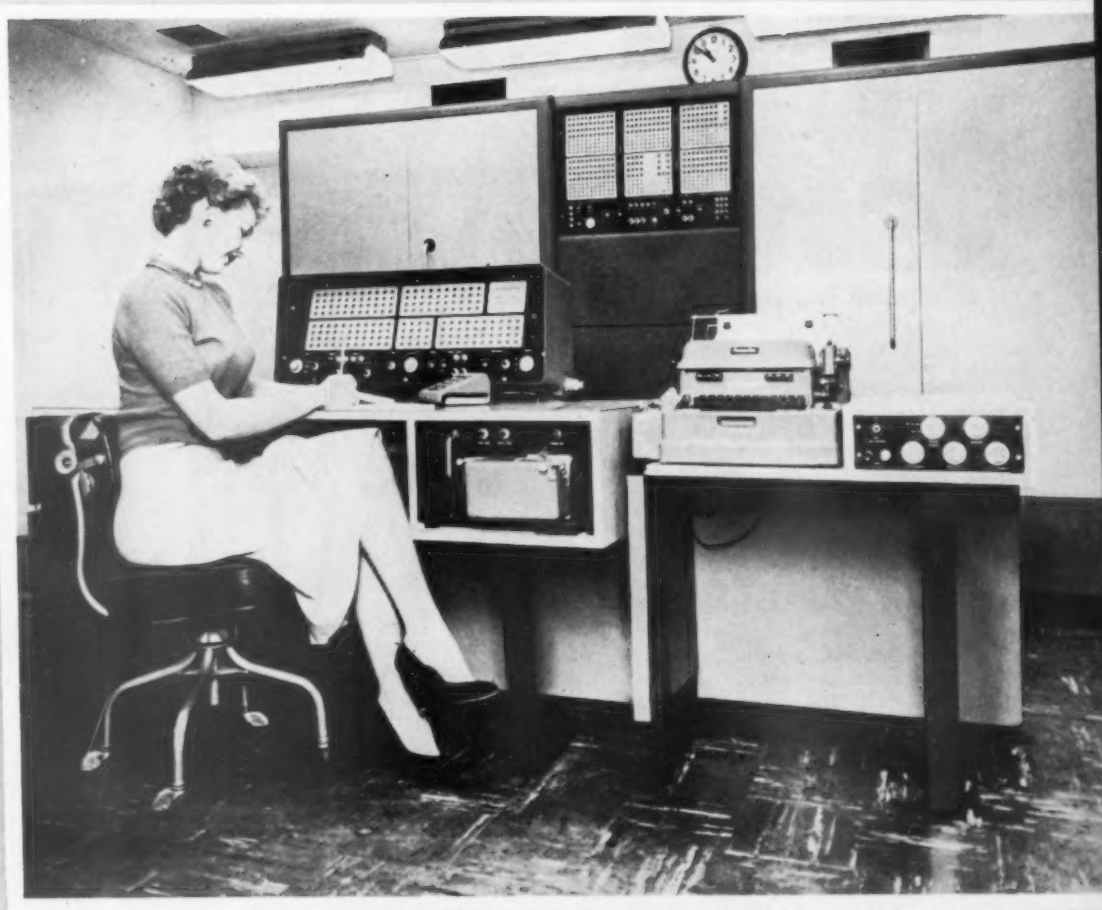
Low cost **self-locking nuts** manufactured by the Jacobson Mfg. Co., Inc., Kenilworth, N.J., are claimed to be immune to the effects of oil or water because of their all-metal construction. Serrated, hardened teeth on the face of the nut provide positive locking action. Hardened by scientifically controlled heat treating, nuts are available in all machine screw sizes.

Circle No. 69 on Inquiry Card—Page 17

Office Equipment and Supplies section of PURCHASING Magazine

OCTOBER 1954

Is this tomorrow's office? High-speed electronic computing is promising fantastic benefits for office operations. These machines, that perform in seconds what the human mind needs months to accomplish, may someday be the heart of the office workstation.



PURCHASING MAGAZINE—A CONOVER-MAST PUBLICATION

205 EAST 42ND STREET, NEW YORK 17, N. Y.

OFFICE EQUIPMENT

News

On-the-spot copying of office papers and documents up to 8½" 14" is now possible with a legal model Verifax



Printer, according to Eastman Kodak Co., Rochester, N. Y. The new copier uses the same basic principle as the Verifax Printer introduced a year ago, its main difference being its ability to handle larger-size documents.

Circle No. 70 on Inquiry Card—Page 17

Multiple-copy business forms which contain no carbon papers are being made and marketed by The Baltimore Salesbook Co. They are printed on special paper developed and patented by the National Cash Register Co. Normal pressure in writing on the top sheet reproduces data on copies. Impressions are clean, sharp, and smudge resistant. Samples can be obtained from The Baltimore Salesbook Co., 3142 Frederick Ave., Baltimore 29, Md.

Circle No. 71 on Inquiry Card—Page 17

A 4-page bulletin, No. 54C5, describes the office-size Copymaster whiteprinters made by Peck & Harvey Sales Corp., Chicago. It details the 115 volt, 60 cycle, ac, model 1400F and the model 600F, both floor models. It also describes the table model 1400T, model 600T and the portable 600P.

Circle No. 72 on Inquiry Card—Page 17

Ozalid, a division of General Aniline & Film Corp., Johnson City, N. Y., has introduced the first positive working paper plate that can be made directly from a translucent original. It is now possible to create a paper plate for any popular offset duplicating machine in less than 90 seconds processing time.

Circle No. 73 on Inquiry Card—Page 17

A new, fully automatic, high production whiteprinting machine, called the Pease Challenger, has been announced



by the C. F. Pease Co., Chicago. Its printer and developer are synchronized to a maximum of 40 ft. per minute. For its light source, it uses a GE 4000 watt, high pressure, mercury vapor lamp.

Circle No. 74 on Inquiry Card—Page 17

Hunter Photo Copyist, Inc., Syracuse, N. Y., is marketing a new photocopying machine that uses a principle similar to the one employed in self-developing cameras. Named the Hecco-kwik, it reproduces any material up to 12" in width in less than 45 seconds. In addition to reproduction of line material, the Hecco-kwik can be used to make copies involving half-tones.

Circle No. 75 on Inquiry Card—Page 17

Rex-Rotary Distributing Corp., New York, is introducing a new series of metal plate addressing machines. The "Listax" is a hand or foot operated machine that feeds its plates from an original filing tray holding up to 100 plates. The trays serve as plate loaders and receivers. A selector built into the printing arm permits plates to pass through the machine without printing. Every Listax is equipped with a repeater. Hand addressing machines print more than 1,000 addresses per hour, while foot and electrically operated units produce about 3,000 per hour.

Circle No. 76 on Inquiry Card—Page 17

A new rotary file, called the Ferris Master Junior Rotary File, is being introduced by Ferris Business Equip-



ment, Inc., Stratford, Conn. Available in four cabinet sizes, Nos. 25, 35, 45, and 60, it operates by push button and foot pedal. Files make one revolution in nine seconds and revolve clockwise or counter-clockwise. All files are mounted on ball bearing casters. All files are 38½" high. The files are described in a new six-page brochure—No. 140.

Circle No. 77 on Inquiry Card—Page 17
(Please turn to page 182)

UNDER THE NEW SYSTEM . . . With Mobile Kardex file at desk-side, expeditor instantly refers to order copy, takes indicated action and makes proper notations. Office-time saving is estimated at 80%.



UNDER THE OLD SYSTEM . . . a file clerk pulled follow-up copy of order for each reference or notation desired by chief expeditor. Copy was later refiled.

expedited!

15,000 purchase orders totaling 16 million dollars

RECORD HANDLING ECONOMIES "AS HIGH AS 80%" CAN BE YOURS, TOO!

A simple and economical new system for handling purchasing records increases efficiency . . . saves valuable time for the Machinery Division, Dravo Corporation, Pittsburgh, Pennsylvania.

"We estimate that the direct economy in clerical time and effort, in avoidance of constant filing and refiling, runs as high as 80%. In the face of steadily increased volume, we have eliminated departmental overtime, and there is no backlog of unfinished work."

These words of Mr. Gordon P. Smith, Purchasing

Agent for the Machinery Division, Dravo Corporation refer to their system for expediting purchasing records using Remington Rand Kardex Visible Control Methods.

Under the system used by Dravo Corporation, "the control copy never needs to be removed from the file, and can always be located instantly."

For free literature and full details about the work and time saving system employed at Dravo, write for CH954, Room 2040.

Remington Rand

315 FOURTH AVENUE, NEW YORK 10, NEW YORK

For More Information Circle No. 199 on Inquiry Card—Page 17

Check Handling the Modern Way

by G. H. Gutekunst, Jr.

CHECKS, although simple in appearance, represent a comparatively complex business operation. From the time they are torn from the checkbook, until they reach the final stage of destruction, they often pass through many hands and business systems for recording, verification, accounting, etc. Actually, a check represents considerable time and human effort during every stage of its history.

For large companies, with highly integrated accounting systems using high-speed machines, check handling tasks are relatively simple, fast and efficient. For the smaller organizations, however, it may be a different matter. They must rely on skillfully introducing individual, automatic devices into their accounting system. And, from the variety of equipment available,

there is little doubt that any organization can find some tools that will greatly improve and speed up its check handling procedures.

Checkwriting machines are comparatively inexpensive for the amount of protection they give and the amount of time and effort they save. While the machines of individual manufacturers differ in many respects, the ultimate results are the same.

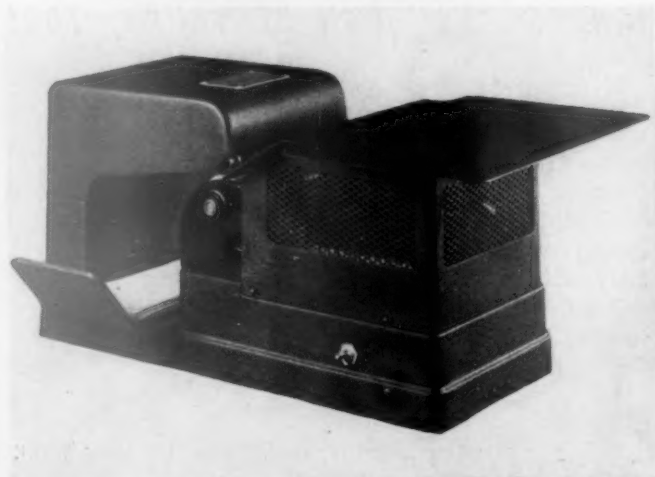
Basically, these machines operate by having the amount of the check setup on a keyboard, or by dial wheels, and then feeding the check into the machine. Pressure is applied to the paper's surface which bites into the fibres and imprints the amount. At the same time, the name of the payee is serrated to block manipulation by a forger. The final result is so deeply im-

bedded in the paper of the check that it cannot be altered without destroying the paper itself.

The Hall-Welter Co., Inc., Rochester, N.Y., is one of the manufacturers of this type of machine. Its Speedrite "900" Checkwriter, in addition to the previously described work, imprints the company name as a prefix to the amount of the check. It's a hand operated machine that has a visible dial indicating the amount set. The dollars and cents value is set by moving levers, vertically, on its "keyboard".

Monroe Calculating Machine Co., Inc., Orange, N.J., has both dial set and keyboard machines. Its keyboard checkwriters are model D-8-ww, which has a capacity from 1¢ to \$999,999.99, and model D-10-ww, with a listing of from 1¢ to \$99,999,999.99. There are also hand-

The Endorsograph of Commercial Controls Corp., has flexible positioning of the endorsement. It can handle 225 checks per minute and stack them in sequence.



Monroe Calculating Machine Company's wheel-set checkwriter can be equipped for automatic dating, consecutive numbering and signing simultaneously with the writing operation.

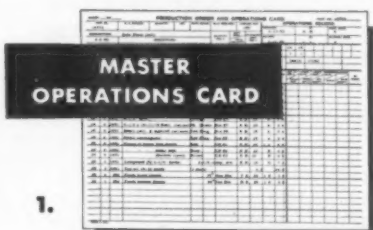


Unlimited Re-entry of Production Orders Without Transcribing Detailed Specifications...



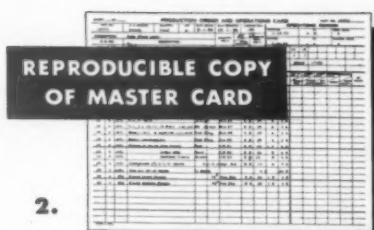
New Bruning Copyflex Provides the Simplest and Tightest Control Ever Devised for Ordering Parts, Sub-assemblies, and Final Assemblies!

Bruning Copyflex
Model 100—\$495.00



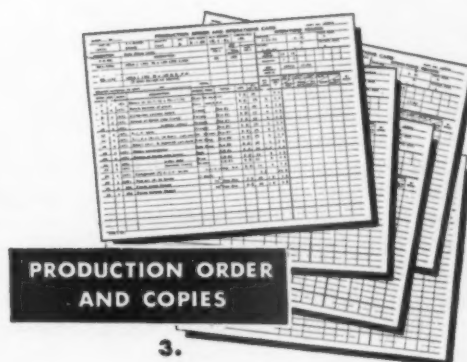
1.

Translucent Master Operations Card is prepared by process engineer. A reproducible film copy is made in a Copyflex Machine and sent to Production Control. Original Master Card is retained for close control of process or engineering changes. Master Card bears all specifications necessary to manufacture particular part or assembly.



2.

Reproducible copy is converted to a production order by addition of order number, quantity required, and necessary dates. This variable information can be erased from the film and new variable information recorded whenever desired. That means unlimited re-entry of production orders without retranscribing detailed specifications.



3.

Production Order and copies are made from reproducible film in Production Control's Copyflex Machine. Copies serve as material requisitions, move tickets, material travelers, expeditor copies, and other reports. Combined operations card and production order insures that factory produces to latest change.

The diagram above shows how the new Copyflex System gives you the tightest control ever devised to insure that the factory produces to the latest approved change.

To issue production orders, Production Control makes use of the basic Operations Card. This does away with countless retranscriptions of production orders, material requisitions and travelers, move tickets, and other requirements. It elim-

inates 90% of the clerical work otherwise required. Paperwork is mechanized for fast, tight and efficient control.

For simplifying and speeding paperwork in any business system, Copyflex machines offer a faster and easier way to make copies mechanically. They are clean and odorless; require no venting or plumbing; need no stencils, masters, messy inks, or carbons.

Write today—every day you delay, you're wasting time and money if you are not getting the copying benefits offered by Copyflex.

BRUNING

Copyflex

Copies anything typed, written, printed, or drawn on ordinary translucent paper in seconds.

CHARLES BRUNING CO., INC., 4700 W. MONTROSE AVENUE, CHICAGO 41, ILLINOIS

For More Information Circle No. 200 on Inquiry Card—Page 17

Charles Bruning Company, Inc.

4700 Montrose Avenue, Chicago 41, Ill., Dept. 221

Please send me free booklet on Copyflex and how it will help me obtain better production control.

Name _____ Title _____

Company _____

Address _____

City _____ Zone _____ State _____



This Checkwriting Accounting Machine of National Cash Register combines accounting operations with its check preparation and handling procedures.



A touch of the trip bar writes, signs, and dates checks on the Protectograph Disburser of the Todd Co. The check is complete except for the payee's name.

operated models with the same capacities. Its wheel-set, or dial-set, machine is the automatic GRMH-wb, which lists from 1¢ to \$99,999.99. Monroe's Adding-Listing Check Writer, A-4-wb, does a complete job of check preparation. It writes, signs, dates, numbers and counts checks. At the same time, each amount is set up in the adding section and listed on a tape.

Checkwriter Accounting Machines are products of the National Cash Register Co., Dayton, Ohio. These machines combine accounting operations with the preparation, writing, signing, protecting, counting and listing of checks. There are six models with a variety of accounting "extras" involved.

The Safeguard Corp., Lansdale, Penna., markets three hand-operated checkwriters. Its "H" model and "Voucher" model use sliding levers on its "keyboard" to set the amount of the check. Safeguard's "K" model uses a unique "tilting" action of its keys to indicate the amount setting. The keys pivot when depressed, thus accenting the digits involved in the amount setting.

Todd Co., Inc., Rochester, N.Y., makes the electric "Protectograph" model 79. Its new "Protectograph Disburser", however, dates, writes, protects and signs the check simultaneously. It uses a trip bar to actuate the keyboard settings.

While the busy executive rarely appreciates the efforts involved in

preparing checks, no one is more acutely aware of the work involved in signing these important items. A slight case of writer's cramp or inky fingers is only minor when compared to the amount of time that often must be diverted from relatively more important tasks. For that reason, the office equipment industry offers check signers.

As was noted with checkwriters, some of the machines also incorporated the check signing activity. However, there is a variety of makes and models devoted more specifically to signing checks.

All these machines use dies of signatures, legally acceptable by all banks, which are imprinted to vali-

(Please turn to page 179)

This model of a Safeguard Corporation checkwriter is a manually operated machine that uses sliding levers to set the amount of the check on the keyboard.



A Todd Company Protectograph Signer uses two-keys to prevent unauthorized use of the machine.



Intense Color
at Feather Touch..

Colorbrite

WETPROOF! FADEPROOF! SMEARPROOF!

*Writes as smoothly
as a black lead pencil!*

EBERHARD FABER

Since 1849



26

**HIGH-VISIBILITY
COLORS**

A QUICK GUIDE TO Greater Pencil Value

Getting just the right pencil or eraser for each job saves time and trouble...costs no more! Which should YOU be using?



A. ARTISTS, ENGINEERS, DRAFTSMEN! 18 controlled degrees, plus superb smoothness makes *Microtomic* the choice of men at the board. Scientifically balanced for perfect control.

B. DISCRIMINATING PEOPLE choose *Van Dyke* for ultra-smoothness and its flat adjustable eraser.

C. WRITERS ATTENTION! The extra black, thick lead *Ebony* writes smoothly on any paper. Perfect for quick memos, sketches and layouts too.

D. ACCOUNTANTS prefer *Thin-Rite* for small, neat figures. Sharpens to a fine point and holds it!

E. A BOTTLE OF INK IN A PENCIL is safer and quicker to use. *Noblot* satisfies legal requirements as well as your personal convenience.

F. WRITES ON ANY SURFACE—glass, metal, plastic, cellophane, even movie films can be clearly marked with *Marker* paper-wrapped or mechanical pencils. Popular colors.

G. FOR WRITING, DRAWING, AND PAINTING! The miraculous *Mongol Colored Pencils*. 36 colors, thin, strong indelible leads. Ideal for charts, maps and color visuals.

H. OFFICE PEOPLE PREFER COLORBRITE LEADS! In handsome "see-thru" plastic barrels. 12 brilliant colors!

J. THE MOST WANTED BUSINESS PENCIL in the world. The new *Miracle Mongol*. Smoother writing! Blacker lines! Extra strength! Longer wear! Look for new Bull's Eye Marking!

PAPER-MATED ERASERS



Van Dyke...typists' choice for soft surface letterheads, tissues and carbons. For harder surfaces use *Comet*. Both available with or without brush.



Pink Pearl cleans as it erases. Exceptional quality removes black pencil marks without roughening paper.



Ruby firm and durable for office forms. Erases black or colored pencil marks.

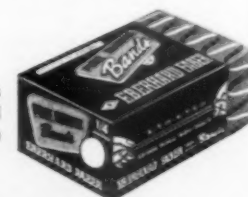
Star Plastic Type Cleaner removes dirt and ink from typewriter keys, office machines, rubber stamps, etc. Nothing to spill, keeps hands clean.



Re-Nu is paper-wrapped, self-sharpening. For correcting originals and carbons. With or without brush.

Singlex, the giant 7-inch pencil-shaped eraser sharpens in a pencil sharpener. Excellent for ink or type marks. With or without brush.

Kneaded Rubber picks up pastels, black lead or charcoal. Ideal on tissue thin surfaces.



Save Time and Twine with Eberhard Faber Rubber Bands. Strong, clean, dependable, stretch 7 times their length.

EBERHARD FABER

Since 1849

Check Handling—the Modern Way

(Continued from page 174)

date the check. Some of the machines are adaptable for dual signatures and all have various protective devices to prevent mis-use of the valuable signature dies. All signatures imprinted are protected by various methods and, thus, cannot be forged.

The Check Writer Co., Inc., New York City, markets a check signer called the "Protex" model D. It uses single or double signature plates; protects with a lined, wavy or scroll background; and can imprint using three colors simultaneously as another protective device. It will also sign vouchers, forms and letters and can also be used as an endorser.

Models Convert to Endorsers

The three models of Cummins-Chicago Corp., also can be converted to endorsers. This company uses a two-key system to prevent mis-use of the signature dies. One key locks the die into the machine and another key must be used to unlock the starting switch. A counter, visible only when the signature die is accessible, records the number of checks produced. Thus the holder of the signature die has absolute control over the number of checks to be run off. The Cummins models are the 250, 240 and 270. These machines all sign, date, count and stack in sequence.

The "Chexsigno" machines, electric and hand-operated, of Hall-Welter Co., Inc., imprint a serrated signature from their dies. A non-resettable counter that records every signature, plus a removable die provide additional protection. It also has a locking device to make the machine unoperative.

Check signers of the Monroe Calculating Machine Co., Inc., are electrically operated for high-speed handling. The model SA-2 handles single checks only. The SA-2-wv is adjustable for single or voucher checks. They both have a check count meter lock, signature plate lock and operator's lock to protect against unauthorized use. Monroe's model SA-3 is a hopper-fed, fully-automatic machine.

The check signer of the Safeguard Corporation uses two locks as its protective device. One lock controls movement of the machine's handle, while the other governs the inser-

(Please turn to page 180)



Should they all
use the same
carbon paper?



Three secretaries . . . three jobs . . . three different carbon papers needed! Alice's boss sends one-of-a-kind letters with one carbon required. Joan must produce eight clear carbons for routing. Claire's boss is a statistician and his figures must be legible. No one carbon can do all these jobs equally well.

Webster's famous MultiKopy Carbon Papers come in weights and finishes for all these office needs and many more. Each sheet is constructed for true value in color, sharpness of impression, and wear. There are 52 weights and finishes for standard machines and 20 for noiseless machines.

With MultiKopy you can use a "custom" carbon — tailored to the machine, the job, and the individual touch of the operator. Discuss with your stationer the kinds of MultiKopy carbons that your office requires. Then see what a difference using the right carbons makes — in savings of time and office supplies and in clear legible impressions.

Carbon papers and inked ribbons for every office need by:

F. S. WEBSTER COMPANY

7 Amherst Street
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THAT'S FOR ME! A FREE BOOKLET OF IDEAS FOR PEOPLE WHO USE OFFSET DUPLICATING MACHINES



Colitho

THE "ONE-WRITE" WAY TO RUN A BUSINESS

Colitho Division, COLUMBIA RIBBON AND CARBON MFG. CO., Inc.
7010 Herb Hill Road, Glen Cove, N. Y.

Please send me, without cost or obligation, the Colitho booklet, "Cash in on your offset duplicator's idle time!"

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Company _____
Address _____
City _____ Zone _____ State _____



(Continued from page 179)

tion and removal of the signature plate. Safeguard's machine macerates the signature into the check's paper.

The "Protectograph" signers of the Todd Co., Inc., in addition to using the two-key locking system, have their signature plates designed with a complex "fingerprint whorl" background. A special register book is also used to keep track of the signature meter number so as to provide an accurate accounting of the number of impressions run off on any one signature plate. Other Todd machines, their Blue Streak models, are combinations that imprint, protect, add, list, sign and count.



Hall-Welter Company's Chexsigno machines imprint a serrated signature from their dies. A non-resettable counter records every signature and the signature die is removable.

For companies that receive a quantity of checks that place a burden on the endorsing phase of check handling, there are several machine endorsers available.

These machines are tripped by the insertion of a check, after it has been listed, and automatically endorse, date, and stack in sequence.

The model 9A Check Endorser of the American Perforator Co., Chicago, is typical of these machines. It uses instant-drying ink and will hold more than 350 checks, stacked in sequence. A metal die imprints the endorsement.

Cummins-Chicago endorsers, also check signers, use resilient parabutene for its printing plate. The date is set on these machines by moving months and digits on dials set into the endorsing plate.

The Endorsograph of Commercial Controls Corp., Rochester, N.Y., permits flexible positioning of the endorsement. This prevents obliteration of previous endorsements. It can be used in conjunction with a microfilm camera, permitting checks to be filmed without being endorsed or vice versa. It has a variable speed

control and will endorse up to 225 checks per minute on straight endorsing.

A final aid in the business of handling checks, is the cancelling device. These machines punch a series of holes in the checks making them invalid. Dies are made up from a variety of sizes of letters, digits, and stock phrases—void, paid, vouch'd, shipped, etc. They can often be used for other operations besides check handling.

The American Bank Equipment Co., Philadelphia, markets its model 700 electric and model 800 manual machines for cancelling checks, bonds, invoices, notes, etc. The machines will punch through stacks of 15 checks or papers at a time. A removable die block allows quick replacement of dull, or broken punches as well as flexibility of operations.

Cummins-Chicago also makes these devices. They have three models, model 300, which is automatic; model 900, hand operated; and a heavy-duty model 76 for large volume work.

Aside from these individual items, check handling equipment is part of many of today's fine accounting systems. IBM and Remington Rand, for instance, incorporate many check handling features in their high-speed equipment. Addressograph-Multigraph Corporation produces some efficient and valuable tools based on the IBM check and tabulating systems.

But, regardless of the size of a company, and regardless of its existing systems, a careful study of the field will hint at many possible savings in time and money. A closer study will probably prove the hints to be an actuality.

Additional information on these latest developments in the office equipment field can be obtained by using the reader service postcard on page 17. Just circle the corresponding numbers and complete information will be forwarded to you.

Prominent Users of Strathmore Letterhead Papers: No. 112 of a Series

Colonel W. F. Rockwell, tireless chief executive of Rockwell Manufacturing Company, is responsible for this industrial combine that produces nearly half a billion dollars in yearly sales.



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The twenty independently operating divisions comprising the Rockwell Manufacturing Company, while diverse in their products, have one important common bond. This is a uniformly high production standard that makes quality a basic concept in every Rockwell enterprise.

Through associated effort, each member firm derives valuable advantages from the experience, research, productive capacity and distribution facilities of the entire group. This coordination provides for product improvement and better distribution...and for making Rockwell an increasingly important name in American industry.

This unique industrial organization lets a Strathmore Letterhead Paper carry the word of quality for each of its members. Every time a Rockwell executive signs his name to correspondence, he is sending handsome evidence of the reputation and the fine character of his company.

Your firm's letterhead should do as much. If you already use a Strathmore Letterhead Paper, you know the satisfaction which its expressive quality brings. If not, let your supplier show you a selection of Strathmore papers...choose one to put *your* firm in good company!

STRATHMORE LETTERHEAD PAPERS: *Strathmore Parchment, Strathmore Script, Thistlemark Bond, Alexandra Brilliant, Bay Path Bond, Strathmore Writing, Strathmore Bond. Envelopes to match converted by the Old Colony Envelope Company, Westfield, Mass.*
NEW STRATHMORE THIN PAPERS: *Strathmore Parchment Onion Skin, Strathmore Bond Onion Skin, Strathmore Bond Air Mail, Strathmore Bond Transmaster.*

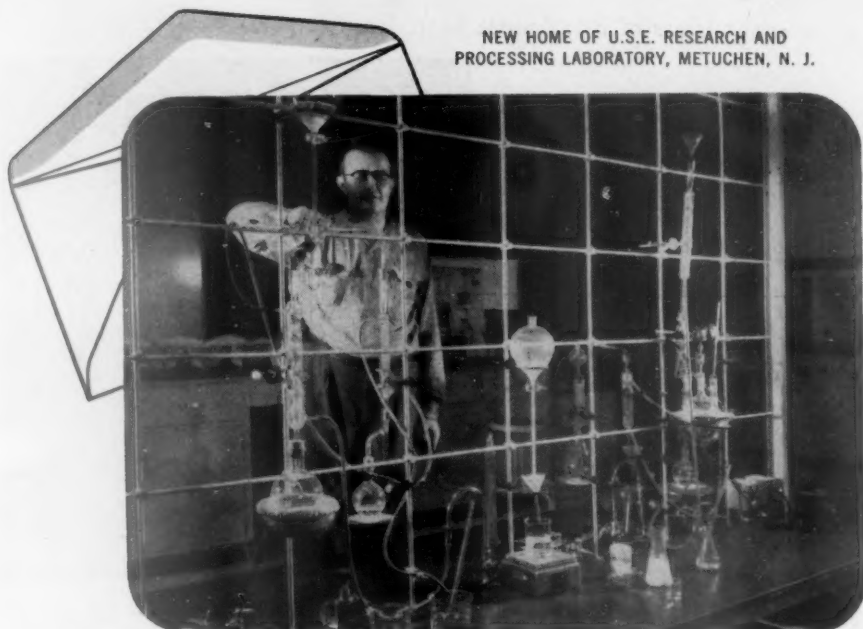
STRATHMORE

MAKERS OF FINE PAPERS

Strathmore Paper Company, West Springfield, Massachusetts

For More Information Circle No. 204 on Inquiry Card—Page 17

NEW HOME OF U.S.E. RESEARCH AND
PROCESSING LABORATORY, METUCHEN, N. J.



Seal Flap Gum got its Ph. D. here

For years, the U.S.E. Laboratories have taken the lead in the development of new envelope gums. Their work with starches and dextrans, plasticizers and wetting agents, polymers and copolymers . . . has produced thousands of gum formulas. But only those able to pass the "Final Degree" tests become U.S.E. brands, such as GRIP-QUIK®, TROPIC-SEAL, SELF-SEAL® . . . and now the new **vVx SEAL***

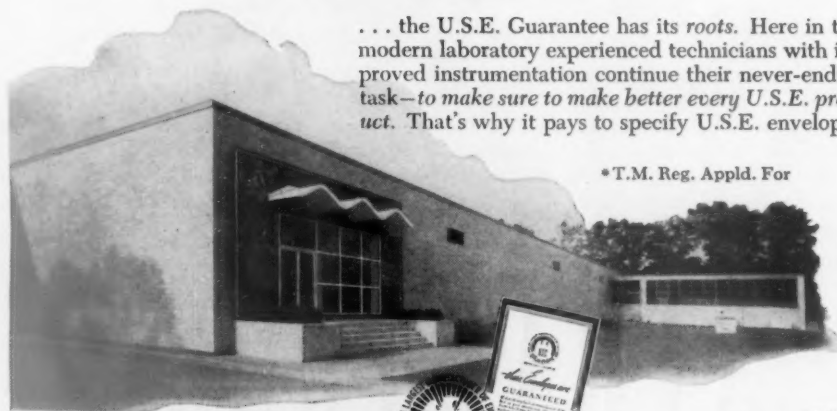
vVx the improved synthetic-type seal flap gum, is a recent graduate; having passed all final tests. It offers visibility, instant tack with normal moistening, positive seal by "hand" or machine, neutral taste, pressman's OK, and resistance to curl and humidity.

vVx is now being used on all stock Commercial and Official sizes of White Woves and Bonds. Ask for samples.

Behind these Doors

. . . the U.S.E. Guarantee has its roots. Here in this modern laboratory experienced technicians with improved instrumentation continue their never-ending task—to make sure to make better every U.S.E. product. That's why it pays to specify U.S.E. envelopes.

*T.M. Reg. Appld. For



**UNITED STATES
ENVELOPE COMPANY**

Springfield 2, Massachusetts
15 DIVISIONS FROM COAST TO COAST

For More Information Circle No. 205 on Inquiry Card—Page 17

A portable, wireless intercom has been announced by **General Industrial Co., Chicago**. Called the Port-A-Phone, the two-way intercom plugs into any standard 120 volt ac or dc outlet for operation. It is made of plastic with a mottled mahogany finish. It is 8¼" wide, 5½" deep and 6" high.

Circle No. 78 on Inquiry Card—Page 17

Metallic-back carbon paper that eliminates feed-roll streaks is being made by **Allied Carbon & Ribbon Mfg. Corp., New York**. Called Flagship, it is available in a variety of weights and writing strengths.

Circle No. 79 on Inquiry Card—Page 17



A new table and desk model lamp called the Sight Light Decomode, is being marketed by the **M. G. Wheeler Co., Inc., Greenwich, Conn.** Using the patented Sight Light louvre and aluminum reflector and baffles, the lamp reflects the maximum amount of light from a stand 100 watt bulb. Available in seven different colors, the Decomode is a Series 600 model of the Wheeler Co.

Circle No. 80 on Inquiry Card—Page 17

An all aluminum file shelf is being marketed by **Metal Products Engineering, Inc., Los Angeles**. It is 11" wide and 13½" long and attaches through the handle of any filing cabinet drawer. Rubber bumpers prevent scratching or marring cabinet fronts.

Circle No. 81 on Inquiry Card—Page 17

Eastman Kodak Co., Rochester, is producing a new opaque microprint card reader for all microcards up to 8 by 14 inches. Known as the Kodagraph Microprint Reader, Model A, it features a typewriter-like roller which grips the card and permits selection of any portion of the card for reading. Page images are seen on a green viewing screen made of a special material to eliminate glare spots. The reader measures 17½" high, 22" deep and 14" wide. It weighs about as much as a standard office typewriter and operates from a 110-115 volt, ac supply.

Circle No. 82 on Inquiry Card—Page 17

The problem of attaching tags and labels, with a stapler, to corrugated cartons, securing insulation wrappings around pipes, and other similar fastening jobs is handled by the new Duo-Fast Model CT-851-OC stapler made by The Fastener Corp., Chicago. A special mechanism diverts the staple legs out and up in a clinching position, without the use of the usual anvil base. Its use is restricted to soft materials.

Circle No. 83 on Inquiry Card—Page 17

A fast machine method for handling payroll accounting and preparing operating and management records for controlling costs is described in a new IBM booklet, "Payroll and Labor Accounting". It is available from the Department of Information, International Business Machines Corp., 590 Madison Ave., New York 22, N. Y.

Circle No. 84 on Inquiry Card—Page 17

Safway Metal Products Co., Detroit, is introducing a new line of deluxe aluminum hat-and-coat racks. Wall models come in 2, 3, 4, 6, 8, and 10 foot widths. Floor models are made in 3, 4 and 5 foot widths. Both types are available with either single or double hat and package shelves.

Circle No. 85 on Inquiry Card—Page 17

Dittie Inc., Chicago, is building a new plant worth \$3,250,000 in Lincolnwood, Ill., just outside of Chicago. The new building, scheduled to be completed in about a year, will have 310,000 sq. ft. of floor space and will be served by the Chicago and Northwestern Railroad. It will be 760 ft. long and 500 ft. wide, with a two-story section housing the executive and business offices. It will be of steel frame construction with a poured gypsum deck and "sandwich" exterior walls of aluminum sheet, fiberglass insulation and stainless steel.

The purchase of a subsidiary manufacturing company in Wageningen Netherlands, has been announced by the Friden Calculating Machine Co., Inc., San Leandro, Calif. The firm will be known as Friden Business Machines, N. Y.

The Gray Manufacturing Co., New York, has appointed E. H. Whitlam as Michigan branch manager and John J. Slattery as Ohio branch manager for the Audograph Co.

The Mark Simpson Manufacturing Co., Long Island City, N. Y. has named several new appointments. Leroy J. Smith is now the Masco representative for southern California, Arizona and part of Nevada. The Howard F. Condon Company takes over in Colorado, Utah, Wyoming, New Mexico, and the cities of Scottsbluff and Grand Island, Nebraska, and El Paso, Texas. Finally, the Fred A. Bennett Company will handle Masco in Michigan.



1 Baltimore Business Form does the work of 2

Until recently a large wholesale distributor used separate order and invoice forms, had a lag of from five to ten days between delivery and billing. Baltimore Business Form experts considered the problem, designed and recommended a single form. Result: Same-day billing, one form, less cash tie-up, less costly office routine.

WHAT'S YOUR PROBLEM? Leading department and retail stores, wholesalers, delivery services, manufacturers, banks... all have found that Baltimore Business Forms save time, trouble and money. Why do these forms effect such important savings? Because Baltimore

Business Forms are *designed* to fill specific business requirements.

Since 1916, our design and manufacturing experts have solved countless problems in serving over 60,000 of the nation's leading business houses. Their wealth of experience ideally qualifies them to help you. Remember, often a single suggestion may save hundreds... even thousands... of dollars for your company. So re-evaluate your present system in the light of today's constantly changing conditions. Let one of our Business Form specialists help you in solving your business forms problems.

BALTIMORE BUSINESS FORMS

Saving time and reducing costs in business and industry

The Baltimore Salesbook Company

The Baltimore Salesbook Company
3142 Frederick Avenue—Baltimore 29, Maryland

We are interested in seeing samples of Baltimore Business Forms.

Name

Company

Type of Business

Address

City State

For More Information Circle No. 206 on Inquiry Card—Page 17

ESLEECK

.. Thin Papers ..

Reduce
TYPING, MAILING
and FILING COSTS.

Use

Fidelity Onion Skin

For

THIN LETTERHEADS
COPIES
RECORDS FORMS

Send For Samples

ESLEECK MANUFACTURING CO.
Turners Falls, Mass.

For More Information Circle No. 207
on Inquiry Card—Page 17



**ACCOPRESS
BINDERS**
for Economy!

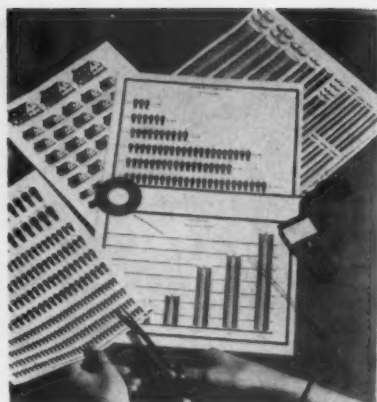
Find the record you want when you want it—ACCO-bind all your business papers. With ACCOPRESS Binders of fine press-board you'll get the efficiency and convenience of loose leaf binding for letters, orders, contracts, invoices, reports, etc. combined with low cost, long life economy in filing. Large capacity (expand up to 6"). Stack flat. Choice of colors and sizes for every need. Ask your stationer. Remember... ACCO-bound papers are SAFE papers.

ACCOBIND folders
ACCOPRESS binders
PIN-PRONG binders
(for marginal multiple punched forms)
ACCO punches
and other filing supplies

ACCO PRODUCTS, Inc.
Ogdensburg, New York

In Canada: ACCO Canadian Co., Ltd., Toronto

For More Information Circle No. 208
on Inquiry Card—Page 17



"Picto-Paks", to make professional looking graphic charts, are available from Chart-Pak, Inc., Stamford, Conn. Picto-Paks are 8½" x 11" sheets of pressure sensitive paper containing 68 to 98 symbols (men, women, coins, stacks of bills, power machinery, etc.) to be used in preparing charts. The symbols come in three sizes, 1¼" ¾" and ½" high. They adhere to plastic, cloth or paper and can be reproduced by photocopy and offset.

Circle No. 86 on Inquiry Card—Page 17

Allan A. Ryan is now chairman of the board and Philip M. Zenner president of the Royal McBee Corp., Athens, Ohio.

Edward Henry Wigand, Jr., has been named manager of the Atlanta, Ga., factory branch office of the Clary Multiplier Corp., San Gabriel, Calif.

SBA Leaflet Describes Sources of Federal Loans

Sources of Federal loans which are of major interest to small business owners are described in a new leaflet announced by the Small Business Administration.

The publication, entitled *Loan Sources in the Federal Government* is Number 52 in the series of Management Aids for small business and may be obtained free upon request from all field offices.

There are numerous Federal agencies authorized to make, guarantee, or to insure loans to deserving individuals or groups, the leaflet points out. In addition to the Small Business Administration, other Government lending agencies—whose lending functions are discussed in the leaflet—are: Veterans Administration; the Treasury Department; the Federal Reserve System; the Department of the Interior; the Maritime Administration; the various loan agencies of the Department of Agriculture; the Housing and Home Finance Agency; and the Export-Import Bank of Washington. The leaflet tells where applications

for various types of loans should be filed.

Certain fundamental requirements that generally must be met in order to obtain a Government loan from any Government lending agency are pointed out in the Aid. These requirements are:

"1. Financing from private, commercial sources must not be available on reasonable terms.

"2. There must be reasonable assurance of repayment.

"3. The loan must be in the public interest."

1 1 1

Roof Valve Helps Fight Fire

A roof unit which for industrial buildings opens quickly when excess interior heat occurs. Called a "fire valve," it was developed for fast release of heat, gases and smoke in the event of fire. It has been observed that dense smoke frequently hides the flame source, preventing effective work by firemen. Each unit provides a 45 sq. ft. opening when two large dampers drop, released by a fusible link device. Dampers can also be opened and closed by a loop chain to use the unit for extra ventilation in good weather. It is made by The Swartwout Co., Cleveland, Ohio.

"Always Makes a
Good Impression"



**Heier CONQUEROR
SPIRIT DUPLICATORS**

with ALL the features . . .

- Print 120 or more copies per minute.
- Print 1 to 5 colors, in one operation.
- For sharp, clean, copies Conqueror features include—Raise-and-Lower Control . . . Adjustable Fluid Control . . . Built-in Reset Counter . . . Pressure Control . . . Positive Rotary Feed.

The Heier Conqueror Model 76, Spirit of '76 gives you for the first time "push-button" automatic electric duplicating . . . gives you complete freedom from manual effort.

Write today for descriptive booklet

THE HEIER CORPORATION
1830 S. Kostner Ave. Chicago 23, Illinois
Quality Duplicators and Supplies Since 1903

For More Information Circle No. 209
on Inquiry Card—Page 17

Supervision Seminars to Be Held in 3 Cities

Supervision problems will be discussed at a series of seminars to be conducted by the American Management Association this fall in Buffalo, Chicago, and New York. Some 350 production executives from all parts of the country are expected to attend.

The supervisor's part in cost reduction and personnel administration will be discussed at the Hotel Statler in Buffalo, Oct. 4-6. Seminars on the supervisor's role in labor relations and cost reductions will be held at the Palmer House in Chicago, Jan. 10-12. All four of these meetings will last for three full days.

The four New York seminars, which will run for two days, will be held at the A. M. A. Management Center at 330 W. 42nd St. The schedule is as follows: the supervisor's role in cost reduction, Sept. 16-17 and Oct. 21-22; the supervisor's role in labor relations, Oct. 28-29 and Dec. 2-3; the supervisor's role in employee training and the company communication system, Oct. 15 and Nov. 15-16; and the supervisor's role in personnel administration, Dec. 16-17 and Jan. 27-28.

These meetings are among a group of some 125 seminars on nearly 100 subjects which will be held this fall in New York, Chicago, Buffalo, and St. Louis by the A. M. A. About 2,000 executives are expected to attend and some 240 will serve as discussion leaders. In addition to supervision problems, there will be seminars dealing with financial reporting, operations research, insurance buying, and automation.

Additional information and copies of seminar announcements may be obtained by writing Seminar Registrar, American Management Association, 330 W. 42nd St., New York 36, N. Y.

Combination Plant Paging, Two-Way Intercom

Specially engineered for use in industry, Executone, Inc., 415 Lexington Ave., New York 17, N. Y., has developed an instrument which permits roving personnel to be located in seconds, and enables them to answer a page call immediately, from any point in the building. To make a page call, any authorized person steps to the nearest station, presses the paging button (Please turn to page 186)

the Pen that fills itself

Fountain-base automatically fills pen every time pen is returned to socket. Pen writes full page or more at each filling.

Choose
the right point for the way
you write . . . by number.

Finger grip
never touches ink. No chance
for ink to touch you.

Point instantly
interchangeable and renewable.
More than 28
point styles.

MODEL 444

Fountain-base "ink-locked"
against accidental spillage.
Only the pen unlocks
the ink.

Fountain-base holds
40 times more ink than
ordinary fountain pen. Won't leak.
Won't flood. Easy to clean
as a saucer.



2668 *General writing*

2442 *Fine Stub*

9550 *Extra Fine*

9314B *Broad Stub*

2556 *Fine writing*

9668 *General writing*

2284 *Signature Stub*

9460 *Medium Manifold*

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CANADA AND ENGLAND
The Esterbrook Pen Company of Canada, Ltd.
92 Fleet Street, East, Toronto, Ontario

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THE ESTERBROOK
PEN COMPANY

For More Information Circle No. 210 on Inquiry Card—Page 17

(Continued from page 185)

and speaks into the handset. His voice is amplified and heard clearly over the all sound reproducers in the plant, even in high noise level areas. The person paged, upon hearing the call, goes to the nearest intercom station, picks up the handset and is automatically put in two-way voice contact with the individual who paged him.

Cutting Embezzlement Losses

It is estimated that stealing by employees costs American business as much as \$300,000,000 annually. No one has yet discovered a sure-fire method of not employing potential embezzlers. They may be 18 or 80, work for a firm four months or forty years, be paid \$1,800 or \$18,000, and steal anywhere from a few hundred dollars to many hundreds of thousands. For the most part, embezzlements are committed by individuals who have no previous criminal records and whose business and personal backgrounds are above reproach.

Management is partially responsible for most acts of embezzlement.

If employees are constantly confronted with opportunity to steal, the temptation may be too great for many of them. Employers have a moral obligation to take every step possible in removing temptation from employees. A practical guide to executives on reducing embezzlement losses was recently published by the Fidelity and Deposit Co. of Maryland, Baltimore 3, Md. The title is "Embezzlement Controls for Business Enterprises" and it is available upon request.

Machine Staples Hinged or Unhinged Lids On Cartons

An automatic stapler closes square center octagonal cartons measuring 26" to 54" across the outside flats, with 6" to 20" square inside openings, and varying in height from 3/8" to 2". It is claimed that change-over time from a run of one size carton to another should not exceed two minutes. The machine is designed to staple hinged or unhinged lids. Stapling time can be drastically reduced on most applications. Cartons are first

packed and the top lid properly located. The operator then presses a switch button which activates the centering arms in the indexing table to position the carton for stapling. He then steps on foot switch and machine automatically staples carton. International Staple & Machine Co., 809 East Herrin St., Herrin, Ill. is the manufacturer.

Release Agent Cuts Clean-Up Time in Half

Users of adhesive applying and coating equipment will be interested in the development of a new releasing agent, named M 12 Release Cote. It is said to offer great savings in time and cost. Clean-up time is reported cut fifty percent. The product prevents adhesives or any other coating materials from adhering to the wall of pots, tanks, rollers, shafts, feed tables and other exposed surfaces. It also prevents build-up on journals and scrapers. It is applied to metal surfaces before filling machine with the adhesive, brush, rag, sponge or sprayment. Potdevin Machine Co., N. Street, Teterboro, N.J. handle

For Top Performance **STAONAL** Marking Crayons

No.

- 1 for Checking
- 1 C.T. Special for China, Tin, Porcelain, Baked Enamel
- 4 for Glass, Cellophane, Plastic
- 5 for Leather, Fabrics
- 11 for Rubber (remains even after vulcanizing)
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**Permanent!
Non-smudging!
Waterproof!
Economical!**

You get better service from these better-quality marking and checking crayons. All are laboratory- and field-tested for top performance, whatever the requirement.

Other permanent and fugitive crayons for rubber, fabrics, wet leather, hot or cold metal, etc.—send for FREE illustrated, descriptive crayon price book sheet, Dept. TP-8.

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Ask any
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Weldon Roberts Erasers
Correct Mistakes In Any
Language. Any Canadian
will tell you that for
half a century they've
continued to be the Do-

minion's biggest eraser "buy". Today, in Canada the demand for Weldon Roberts Erasers is greater than ever.

These most uniform erasers are made in styles and sizes which exactly suit your requirements for quickest, cleanest erasing of mistakes in business writing and handwriting. Ask your stationer.

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121
ELLIPTIC
Soft gray eraser
in handy elliptical
shape for pencil or ink
erasures on all
types of work.
Excellent for
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**Weldon Roberts
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The NEW quick way to make offset plates—

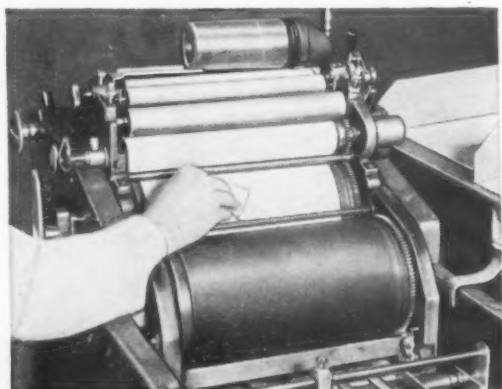
**OZALITH... the first sensitized
positive paper plate... from original to
running press in 90 seconds!**



1—Lay translucent copy over Ozalith, and expose in any Ozalid machine or similar light medium.



2—Place the exposed Ozalith on the printing cylinder of any small offset press.



3—Rub over exposed surface with developing fluid, then fixer, and the Ozalith is ready to print.

For More Information Circle No. 213 on Inquiry Card—Page 17

OCTOBER, 1954



Now for the first time . . . you have Ozalith—a positive paper offset plate that can be made directly from any translucent original.

Just place the original on the Ozalith plate, and expose in an Ozalid machine—Bambino to Printmaster—or any similar light medium.

Put the exposed plate on the press cylinder, swab with developing fluid and fixer, and it's ready to print. The whole process takes less than 90 seconds!

No darkroom, negatives, trays or dryers are needed. And this new paper plate is so inexpensive that it needn't be filed. Overruns are unnecessary. One translucent copy enables you to make quickly a new plate if more copies are needed.

For longer runs, Ozalith plates are also available on aluminum.

Save plate making time, costs and storage space with Ozalith. For a demonstration, call the nearest Ozalid distributor. Or write 661 Ozaway, Johnson City, N. Y.

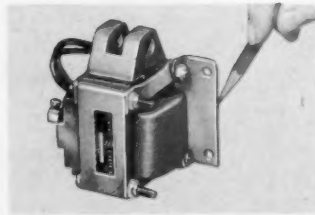
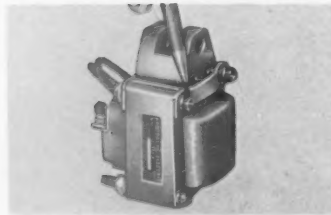
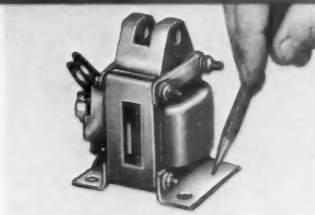
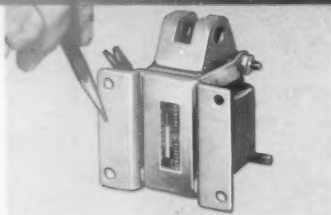
OZALID—A Division of General Aniline & Film Corporation . . . *From Research to Reality.*
In Canada, Hughes Owens Company, Ltd., Montreal.

OZALITH

For More Information Circle No. 214 on Inquiry Card—Page 17→

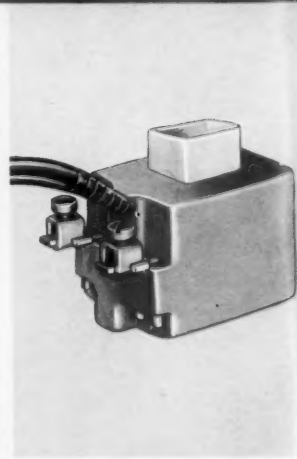
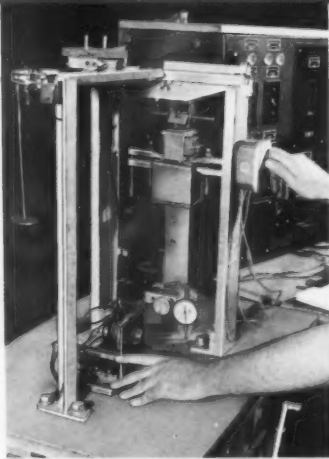


GREATER FLEXIBILITY



New General Electric solenoids mount in five positions — end, right- or left-side, throat, or with thru-bolts. Both leads and built-in terminal board on strongbox coils give added flexibility.

LONGER LIFE



Laboratory tests proved the new strongbox solenoid has much longer life. Long life results from design features such as strong box coil, and double-strength, spring-steel mounting brackets.

The
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NEW STRONGBOX SOLENOIDS

The all-new line of General Electric industrial solenoids was designed to include the features you requested. From your requirements, design specifications for the new line were written — and here is the new, more economical solenoid you asked for.

GREATER FLEXIBILITY

New solenoids mount in five positions. Mounting brackets can be moved to any of the four sides, or thru-bolts can be used. Both leads and built-in terminal board on strongbox coils make either type wiring immediately available.

LONGER LIFE

New General Electric solenoids last longer because of new design components. Strongbox coils, enclosed layer wound Formex* windings, give long electrical life. New double-strength, spring-steel mounting brackets contribute to added life. New design also includes glass fabric plunger guide, and larger linkage-pin hole.

COMPLETE RATING COVERAGE

Complete coverage is supplied by nine ratings in each of the following forms (nominal ratings at maximum stroke).

3.0 to 40 lbs in $\frac{1}{2}$ inch pull forms

1.4 to 36 lbs in 1 inch pull forms

2.0 to 33 lbs in $\frac{1}{2}$ inch push forms

4.3 to 28 lbs in 1 inch push forms

Sizes are available in 60, 50 and 25 cycle, and d-c forms. Voltage ratings are from 24 to 600 volts.

SMALLER SIZE

22 percent smaller for the same power ratings, new General Electric solenoids will reduce space problems when mounting solenoids in your equipment. Smaller enclosures and reduced material costs make new solenoids more economical.

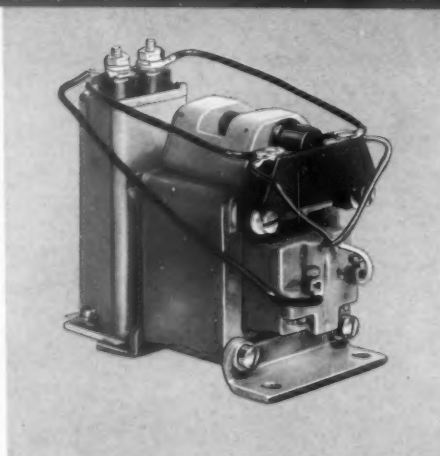
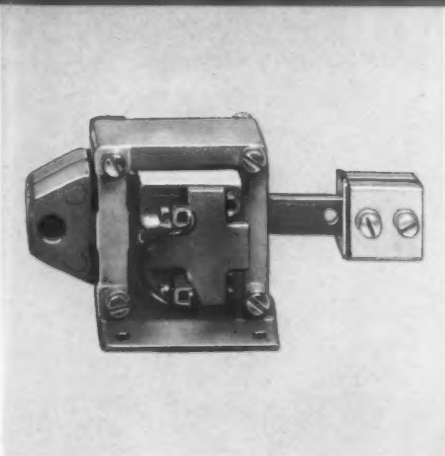
FOR MORE INFORMATION contact your nearest Apparatus Sales Office, or Distributor, or write Section 730-58, General Electric Company, Schenectady 5, N. Y. Ask for Bulletin GEA-6215.

*Reg. Trademark. General Electric Co.

Progress Is Our Most Important Product

GENERAL  ELECTRIC

COMPLETE RATING COVERAGE



SMALLER SIZE



Supplied by nine force ratings in each of the forms, new strongbox solenoids are available in both push and pull forms, at one-half and one inch strokes. All these sizes are available in d-c, 25, 50, and 60 cycle a-c, with voltage ratings from 24 to 600 volts.

22% smaller for the same power ratings, new General Electric solenoids will reduce space problems in your equipment.

AMONG THE Associations



Buying in a Buyer's Market Theme of 7th District Meet

An interesting and informative program is in store for PA's attending the 7th District Conference which will be held at the Andrew Johnson Hotel in Knoxville, Tenn., October 11-12. The meeting will be



NAPA President Howard Ahl will address the 7th District Conference

called to order on Monday, October 11 at 9:30 A. M. by Raphael Semmes, general chairman. Following the invocation by Dr. Charles A. Trentham of the First Baptist Church of Knoxville and greetings by Carl Major, president of the Purchasing Agents Association of East Tennessee, W. H. Harrison, president of TennaVa Association of Purchasing Agents, will open the business session.

The Honorable George R. Dempster, mayor of Knoxville, will welcome visitors and introduce the first major speaker. He will be the Honorable Frank G. Clement, Governor of Tennessee. PA's will find his talk, "Responsibility of Purchasing in State Government," gives a real insight into the tremendous job of purchasing that must be done to keep a state government operating efficiently.

Next in the galaxy of top speakers is Herman Steinkraus, president and chairman of the board, Bridgeport Brass Co. His topic will be "The Real Source of America's Industrial Might." Last, but not least, on the morning program is Ruth G. Conger, assistant to the chairman of the board, Associated Transport Inc. Her topic is one which PA's are becoming increasingly conscious of, "The Purchasing Agent as a Public Relations Man."

The Monday afternoon session will be presided over by J. H. McDowell Jr., president of the Purchasing Agents Association of Chattanooga. Standardization will be the first topic taken up. Arnold O. Anderson of the Aluminum Company of America will speak on "Purchasing and Supply Stores Working Together on Standardization." "Steps in Organizing a Company Standardization Program" will be discussed by L. J. Jacobi of Detroit Edison Co.

Next topic to be taken up is an important one—education. Speaking on the "Responsibility of the Local Education Committee" will be E. A.

(Please turn to page 192)

Outstanding Program Arranged for New England Conference

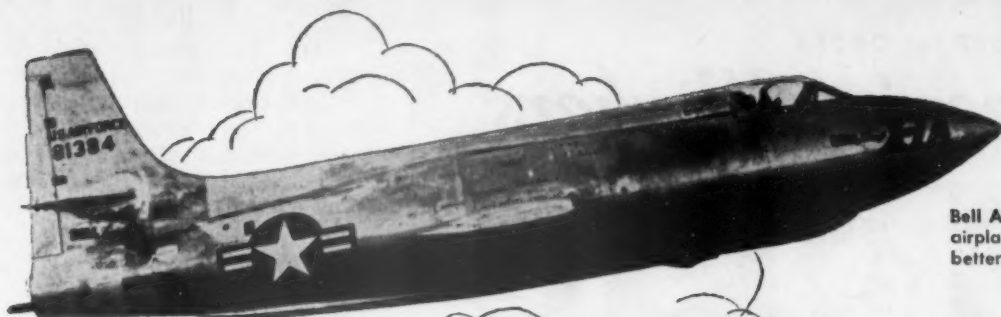
Headquarters for the New England Purchasing Conference to be held on October 20 will be the Sheraton-Biltmore Hotel in Providence. The program committee has lined up an outstanding array of top notch speakers. NAPA President G. W. Howard Ahl will address the meeting. Other leaders in the purchasing field who will speak include Charles T. Haffey, purchasing agent, Charles Pfizer & Co. and Bruce D. Henderson, vice president, purchases and traffic, Westinghouse Electric Corp. Mr. Henderson's topic is "The New Concept of Purchasing" while Mr. Haffey will speak on "Standardization."

George Renard, executive secretary-treasurer, NAPA, will speak on "From One P. A. to Another." The metals picture will be well covered. Simon D. Straus, vice president, American Smelting & Refining Co., will give "The Outlook for Non-Ferrous Metals." The "United States Supply Position in the Field of Metals" will be discussed by John D. Morgan Jr.,

(Please turn to page 196)



Prominent executives speaking at the New England Conference include John A. Hill (left) and Bruce D. Henderson.

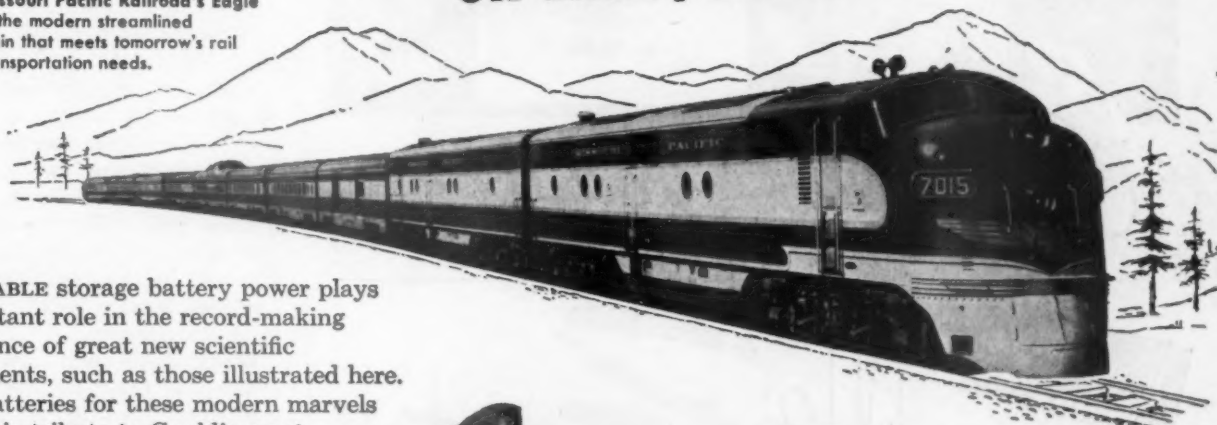


Bell Aircraft's X-1A — world's fastest airplane that broke the sound barrier at better than 1600 miles per hour.

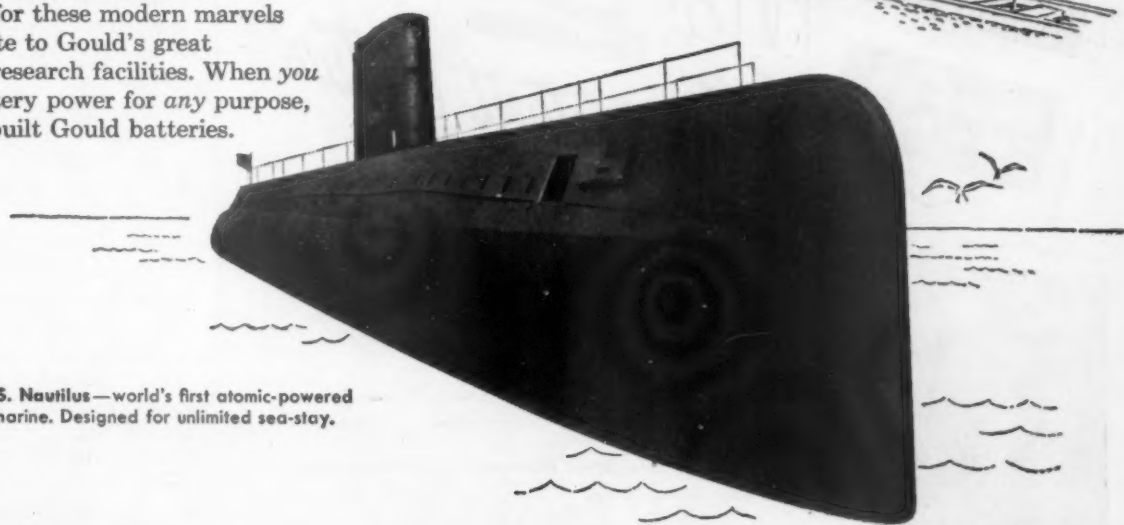
GOULD LEADS

ON LAND, ON SEA, IN THE AIR!

Missouri Pacific Railroad's Eagle — the modern streamlined train that meets tomorrow's rail transportation needs.



DEPENDABLE storage battery power plays an important role in the record-making performance of great new scientific achievements, such as those illustrated here. Gould Batteries for these modern marvels is dramatic tribute to Gould's great engineering and research facilities. When you need storage battery power for any purpose, choose research-built Gould batteries.



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TRENTON 7, N. J.



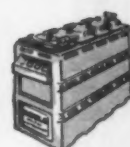
For Railroad Air Conditioning and Lighting



For Mine Shuttle Cars and Locomotives



For Electric Industrial Trucks



For Diesel Locomotive Starting



For Standby and Emergency Power

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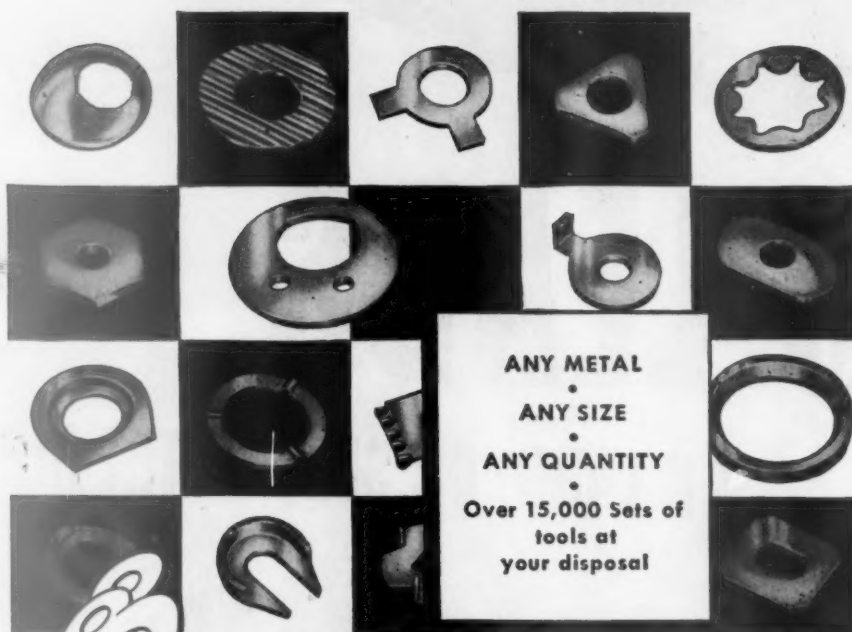
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For More Information Circle No. 215 on Inquiry Card—Page 17

IT'S A SMART MOVE TO ORDER

Special Washers

FROM A LEADER



ANY METAL
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ANY SIZE
•
ANY QUANTITY
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Over 15,000 Sets of
tools at
your disposal

THE E-Master Products Co.

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For More Information Circle No. 216 on Inquiry Card—Page 17

Enduring Top of
Stainless Steel

Famous Sanitary
2-Stream Projector



2
important features

**to promote sanitation
in your plant**

Yes, in one modern cooler you get the two important features
that mean so much in trouble-free maintenance in any plant!

Enduring Stainless Steel Top—easy to maintain, sanitary
and wear-resisting, clean.

Two-stream Halsey Taylor projector—drinking mound
at uniform height regardless of pressure variation, contami-
nation-proof, ever hygienic!

THE HALSEY W. TAYLOR CO., WARREN, OHIO

Halsey Taylor

COOLER FOUNTAINS

F-30

For More Information Circle No. 217 on Inquiry Card—Page 17

(Continued from page 190)

Colvin of Ethyl Corporation. Chris-
tian Lee, Norton Infirmary, Louis-
ville, Ky. will discuss "Integration
of the Education Committee with
Program Chairmen." The "Extent
of Purchasing Education in Colleges
and Universities" will be disclosed
by Clayton R. Plummer of the Uni-
versity of Tennessee.

NAPA President Howard Ahl of
Phillip Morris is the final speaker
of the afternoon session. Those who
have heard Mr. Ahl speak before
know that his topic will be of in-
terest and value.

Monday activities wind up with a
banquet and dance at the Deane
Hill Country Club. Raphael Semmes
will act as general chairman and
the speaker will be Charles G. Arps
of Allis Chalmers Manufacturing
Co.

George H. Cole of Alabama
Power Co. will preside at the morn-
ing session on Tuesday, October 12.
First on the agenda is a report by
the district vice president, Walter
G. Joyce, PA for the city of Mem-
phis. "What Management Expects
from Purchasing" will be outlined
by Frank B. Rackley, president,
Jessop Steel Co. George Renard,
executive secretary-treasurer, NA-
PA, will be the final speaker of the
business session with "From One
P. A. to Another."

Many PA's will arrive at the
conference early so they can enjoy
the scenic beauty of the nearby
Great Smokies in early fall. The
entertainment committee hasn't
neglected the ladies. On Sunday,
they can accompany their husbands
to the Early Birds' Dinner. On Mon-
day, a trip to the Great Smokies
with luncheon and entertainment
at the Greystone Hotel in Gatlin-
burg is scheduled. The following
morning there will be a special
ladies' breakfast at the Andrew
Johnson Hotel with entertainment.

PA's who are golfers will be in-
terested in the tournament at the
Deane Hill Country Club, Sunday,
October 10. After the close of the
business session on Tuesday Octo-
ber 12, there will be a plant visit
to the Alcoa Works of the Alumi-
num Company of America.

**FOR FURTHER INFORMATION
ON PRODUCTS IN THIS ISSUE
PLEASE USE INQUIRY CARD
ON PAGE 17**

DESIGN WITH CONFIDENCE

Design with SEYMOUR

EVERY
TECHNICAL
DATA
CHART
PUBLISHED
BY
SEYMOUR
IS
BACKED
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LABORATORY
CONTROL
OF
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ALLOYS



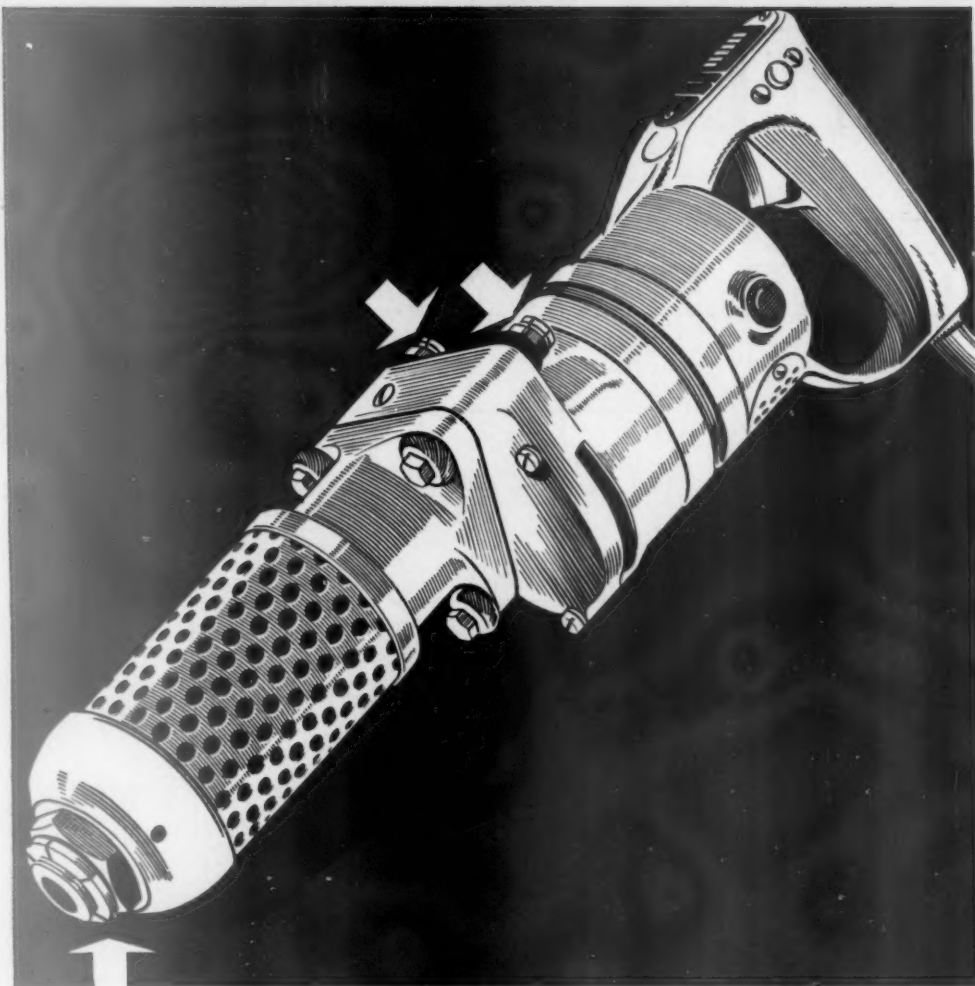
As an example of the *constant* control of Seymour quality, samples of all furnace heats are taken for chemical analysis. No metal leaves the casting shop until released by the laboratory with full approval of the heat. Tests are also made for hardness — Brinell, Rockwell and Scleroscope—and for ductility, tensile strength and grain structure. Alert supervision is present at every stage of production, and each heat goes through the plant with its own identification number.

NONFERROUS ALLOYS SINCE 1878

SEYMOUR NICKEL SILVER • SEYMOUR PHOSPHOR BRONZE

Our engineering department will be glad to cooperate with you and to furnish trial samples. Technical Data Book on request.

THE SEYMOUR MANUFACTURING COMPANY • SEYMOUR, CONNECTICUT



This portable electric hammer is completely self-contained. So are the one-piece, all-metal FLEXLOCs that hold it together, even under the intense impact vibration induced by the rapid hammering action.

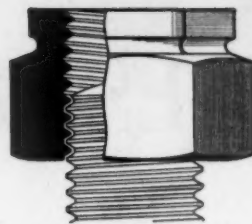
FLEXLOCs chosen to withstand vibration of 3000 hammer blows per minute

The manufacturer of this portable electric hammer reports, "FLEXLOC Self-Locking Nuts have solved our problem of obtaining a desirable fastener, because they withstand the terrific vibration induced by the impact of 3000 hammer blows per minute without working loose."

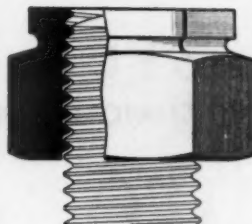
This portable electric hammer is subjected to terrific impact-induced vibration. The fasteners that hold it together must take the same beating. The FLEXLOCs were selected only after numerous fastening devices had been

tested. Two $\frac{1}{4}$ "-20 nuts hold the fastening bolts securely in position on the forward end of the hammer. One 1"-14 nut prevents loosening of the components at the nose.

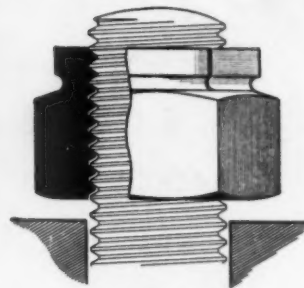
You can get FLEXLOCs of various types and materials in a wide range of sizes and in any quantity. And these one-piece, all-metal locknuts are carried in stock by leading industrial distributors everywhere. See your FLEXLOC distributor or send for literature and samples. STANDARD PRESSED STEEL Co., Jenkintown 31, Penna.



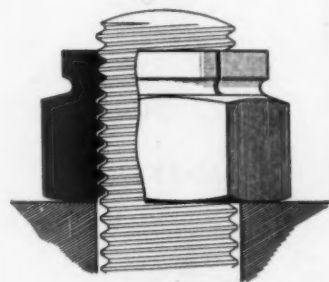
Starting. A FLEXLOC starts like any ordinary nut. Put it on with your fingers. Tighten it with a standard hand or speed wrench.



Beginning to Lock. As the bolt enters the segmented locking section, the section is expanded, and the nut starts to lock.



Fully Locked As a Stop Nut. When $1\frac{1}{2}$ threads of a standard bolt are past the top of the nut, the FLEXLOC is fully locked. A FLEXLOC does not have to seat to lock.



Fully Locked As a Seated Nut. When it is used as a lock or stop nut, the locking threads of the FLEXLOC press inward against the bolt, lifting the nut upward and causing the remaining threads to bear against the lower surface of the bolt threads. Vibration will not loosen a FLEXLOC, yet there is no galling of threads.

FLEXLOC LOCKNUT DIVISION

SPS
JENKINTOWN PENNSYLVANIA

For More Information Circle No. 219 on Inquiry Card—Page 17

Ansul

is the only dry chemical
fire extinguisher backed
by a five year warranty!

Here is proof of Ansul's superiority . . . a five year equipment warranty, the only one of its kind in the fire control industry.

For the buyer of fire equipment this important warranty means many *extra* years of trouble-free protection plus freedom from costly and frequent maintenance checks and repairs.

The special design and construction features that make this warranty possible provide not only dependable protection but also *fast*,

effective fire control. Ansul's *weather-tight* construction keeps out moisture and resists corrosion. *Patented nozzles* deliver the right kind of stream for your fire protection problem. The *sealed pressure cartridge* puts Ansul's "Plus Fifty" dry chemical to work immediately—no delay or lag. And finally *rugged construction* makes it possible for Ansul equipment to give peak performance under the toughest operating conditions.

HERE IS THE BIG TRAINING AND SERVICE PLUS OFFERED ONLY BY ANSUL!

Available without cost to all Ansul users.



Training for your personnel at your plant by Ansul specialists.



Customer training school at Marinette for your key safety personnel.



Visual aids on fire control for your safety meetings and other training.



In-plant survey to scientifically determine your fire protection needs.

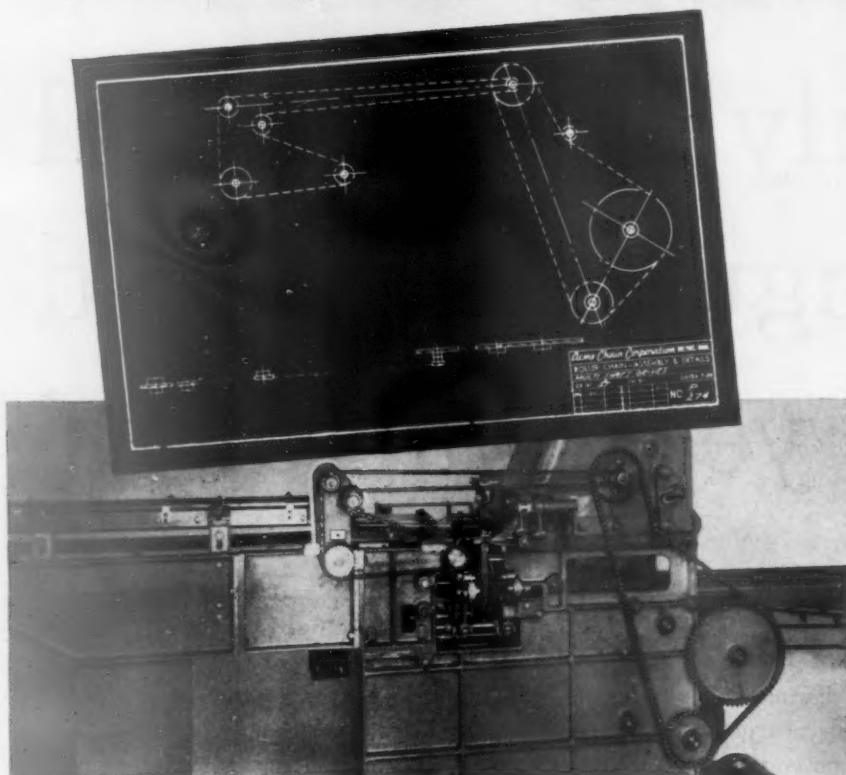
Call the Ansul Man!



Get in touch with your local Ansul man through the "yellow pages" or write ANSUL CHEMICAL COMPANY, Fire Equipment Div., Dept. F-83, Marinette, Wisconsin.

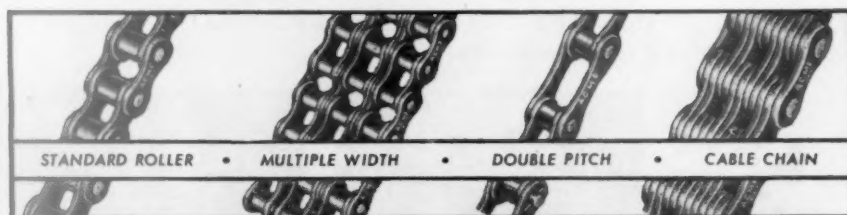


Chain YOUR PROBLEMS solved by ACME engineers



Engineers of the ACME CHAIN Corporation are anxious to cope with any of your roller chain problems. A gratuitous service to our customers... the service of roller chain experts, with 35 years of experience and chain efficiency know-how.

Write or call Holyoke 2-9458.



RUGGED PRECISION CHAIN for EVERY NEED



Write Dept. 8N for new illustrated 76 page catalog on use and application of roller chains and sprockets.



For More Information Circle No. 221 on Inquiry Card—Page 17

(Continued from page 190)
minerals expert in the Office of Defense Mobilization.

"The Business Outlook" will be covered by the well known economist, Martin Gainsbrugh of the National Industrial Conference Board. Representing general management will be John A. Hill, president, Air Reduction Co., and Richard L. Bowditch, chairman of the board, C. H. Sprague & Son Co. Mr. Hill's subject is "Management Views with Respect to the Purchasing Function." Mr. Bowditch will speak on "The Industrial Future of New England."

1 1 1

"One Can Always Learn"

(The following editorial written by Dean Smith, President of the Purchasing Agents Association of Washington, has a particular timeliness now that another business year is beginning for local associations. It is reprinted from the "Washington Purchasing Agent and Manufacturer.")

A short time ago, in a business acquaintance's office, I saw this slogan hanging on the wall:

"Ve get so soon oldt
Und so late schmart."

Later I got to thinking about this and decided there was a lot of good, wholesome sense packed into those few words and, also, that the idea had a practical application to us as purchasing agents in relation to participation in our own local association meetings.

All of us have surely heard the saying that the most unfortunate of men is he who thinks that he knows everything and that there is nothing more to be learned. Of course, I am not making the inference that there would be anyone in such an intelligent group as purchasing agents who would hold with this belief. Truthfully, though, in view of the size of our membership, the percentage of attendance at meetings is not as high as it might and should be. I believe our records will show that, on the proportionate basis of the number of members, the Juniors will have a better attendance record than our Senior members.

Unquestionably, in an organization, either business, social, or fraternal, the novelty of membership wears off and enthusiasm for participation in the activities of the organization frequently becomes less with the passage of years of membership. There are a good many of our older members who have an

(Please turn to page 198)



THIS NEW BOOKLET MAY HELP YOU CUT COSTS 5% TO 25% ON COMPONENT PARTS

You can find out how Steel Plate Shapes Service saves both time and money. Other equipment builders have cut their costs from 5% to 25% by using pre-formed component parts. Here's how.

Steel plate shapes are accurate, can be incorporated quickly and easily into assemblies. You save fit-up time, free machines for other work, speed your entire operation. Plate shapes of rolled steel give you strength, dependability and weight reduction, offer greater possibilities for design freedom.

Steel Plate Shapes Service enables you to reduce plate inventories. You cut scrap handling costs and scrap losses, pay freight only on that part of the plate that is actually required. Over 150 major machines are available to flame-cut, shear, blank, press, bend or otherwise form

steel plate to your specifications. Parts can be furnished as formed, or rough- or finish-machined. A large stock of standard dies of all types is maintained.

THIS FREE BOOKLET will show you how Steel Plate Shapes Service can help you cut costs. To get a copy of Booklet 712 at no obligation, use this coupon or write on your company letterhead to: By-Products Steel Co., 672 Strode Avenue, Coatesville, Pa.



BY-PRODUCTS STEEL CO.

A DIVISION OF
LUKENS STEEL COMPANY

By-PRODUCTS STEEL CO.
672 Strode Avenue, Coatesville, Pa.

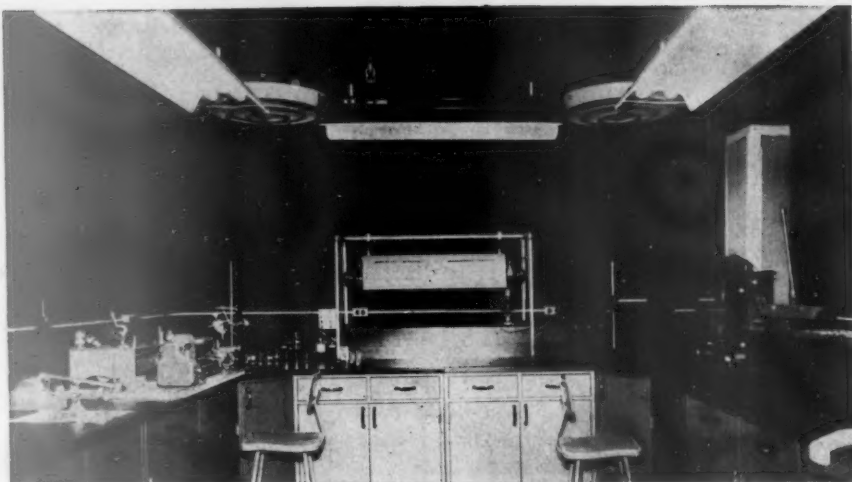
Please send me a free copy of Booklet 712.

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You Can Have DRY Air with EXACT Moisture Control

**for your comfort, for your process, for testing
machines or materials at any time of the year**

Niagara Air Conditioning provides you with any temperature and relative humidity you need, held constant or varied at will. Using "Hygrol" absorbent, you save the refrigeration commonly used to condense moisture and make reheat unnecessary in most cases. It gives large capacity with compact, easily-maintained equipment.

This Niagara Air Conditioning Method dries air directly and measurably, using a moisture-absorbing liquid spray. Humidity control is a separate function from heating or cooling.

This gives you precise control over your air conditions with thermostats alone; no moisture-sensitive devices are needed. You have simpler, more trustworthy, less expensive control instrumentation. Niagara precise-control air conditioning installations have the best record for reliability.

*Write for information on the application to your problem.
Ask for descriptive Bulletins #112 and #121. Address Dept. PU.*

NIAGARA BLOWER COMPANY

405 Lexington Ave.

New York 17, N. Y.

District Engineers in Principal Cities of United States and Canada



For More Information Circle No. 223 on Inquiry Card—Page 17

(Continued from page 196)
exceptionally good attendance record but a larger number of the younger members are the main contributors to our fairly good over-all attendance percentage figure. It is "sad but true" that, from the standpoint of participation in association activities, too large a part of our members are actually not much more than a name on the roster.

Our regular and educational meetings are carefully planned. We try to provide a healthy balance between information and entertainment and feel that each one who attends any meeting takes away with him some new idea or information. Plant visits provide a visual lesson in how other people do things and often show something which may be applicable to our individual problems.

How about more of you coming to meetings and trying to get "schmart" with the rest of us!

1 1 1

Baltimore Ass'n to Hold Products Exhibit

Purchasing Agents Association of Baltimore is sponsoring its twelfth annual Manufacturers Products on October 26-27-28 at the Emerson Hotel. There will be 65 booths. On display will be the latest improvements and designs in electrical, mill and shop equipment and supplies. 43 exhibitors will represent many times that number of manufacturers.

Prizes will be awarded exhibitors having the most attractive and the most informative booths. Frank J. McHugh is general chairman of the exhibit. He is assisted by co-chairman William N. Francis and J. Herbert Gaston.

1 1 1

Procurement Officers of Northern California

Speakers at the August meeting of the Federal Procurement Officers Association of Northern California were LCDR Eric C. Goodwin, USN, procurement officer, Naval Supply Center, Oakland, and R. M. Bracamonte of the Western Packaging Association, Industrial Society of Packaging Engineers, and National Industrial Security Association. LCDR Goodwin's subject was "Navy Procurement in a Naval Supply Center." Mr. Bracamonte described the purpose and scope of the Western Packaging and Materials Handling Exposition which was held recently in San Francisco.

For More Information Circle No. 224
on Inquiry Card—Page 17→

PURCHASING

He isn't on your payroll.

He doesn't have a drawing account.

He doesn't have a desk in your office.

Nor a spot in your shop.

Yet he's been around quite a while.

**He knows more about more things than
you can shake a stick at.**

**His experience is infinite and his
contacts are legion.**



Best man you ever had working for you...

Quite a fellow!

You know him when you see him face to face.

To turn him around, turn this page.





He is an indispensable factor in the economy of the industrial world... the expeditor who keeps hand and power tools, machine parts, accessories and manufacturing staples coming in order to keep plants going.

He is your nearest, quickest, most dependable source of supply. No other system of procurement has yet been devised to assure smoother, uninterrupted industrial operation.

The Industrial Distributor carries a myriad assortment of active items—in types, designs, grades and sizes to meet your specific needs as well as the needs of other manufacturers from whom you buy equipment, materials, assembly units and other production needs.

He also warehouses countless items of long-interval demand which otherwise would tie up your own capital—or expose you to the risk of slow-up or shut-down.

He knows where and how to obtain scarce or sorely needed requisites—thus sparing you the time and expense of searching for them yourself.

He explores the globe for new and improved appliances that may speed up your production, cut your costs, improve your product.

He is a veritable "encyclopedia" of information for keeping you up to date on new practices, processes and paraphernalia.

As a "clearinghouse" for your purchases from all sorts of producers far and near, your Industrial Distributor relieves you of a lot of accounting and other "paper work." By similarly serving such producers in their distribution, he ultimately brings you still further benefits.

...he represents your **Industrial Distributor**



• Nicholson believes in and has adhered to this principle of **MARKETING THROUGH SERVICE** for more than 40 years. As a result, Nicholson Distributors and their field men learn how to **WORK FOR YOU**. They become experts on files and filing—right down into your shop where the right use of **THE RIGHT FILE FOR THE JOB** counts in the way you want it to count. • There are throughout the U.S. more than 875 near-at-hand Industrial Distributors of Nicholson and Black Diamond file; and over the years few of them ever leave us—or you.

NICHOLSON FILE COMPANY

PROVIDENCE 1, RHODE ISLAND

(In Canada: Nicholson File Company of Canada Ltd., Port Hope, Ontario)



World's foremost manufacturer of
A FILE FOR EVERY PURPOSE



Assembly operation eliminated

The old way:

This vise handle was originally cut from bar stock by screw machine. One end of the handle was threaded while the other was machined to a ball head. To complete the assembly a separate internally threaded ball head had to be screwed onto the threaded end by hand.



The National way:

Our "Special Products Service" showed how this vise handle could be produced faster and at lower cost by cold heading. The handle and one head were cold formed to required dimensions. Then, the handle was inserted through the drilled hole in the head of the jaw adjusting screw and the other end was hand headed. Result... substantial savings in material and production costs.



Bring your "Special" problems to National

National has the experience and wide range of cold heading equipment needed to solve many "special" problems. Our "Special Products Service" representative will be glad to study your requirements. Write for free copy of National's "Special" fastener booklet.

Chicago
Cincinnati
Denver
Detroit
Indianapolis

REPRESENTATIVES IN:

Kansas City, Mo.
Lansing
Milwaukee
Minneapolis
New York

Philadelphia
Rochester
San Francisco
Seattle
St. Louis



THE NATIONAL SCREW & MFG. COMPANY
Cleveland 4, Ohio

Pacific Coast: National Screw & Mfg. Co. of Cal.
3423 South Garfield Ave., Los Angeles 22, Cal.



Fasteners



Model Chains

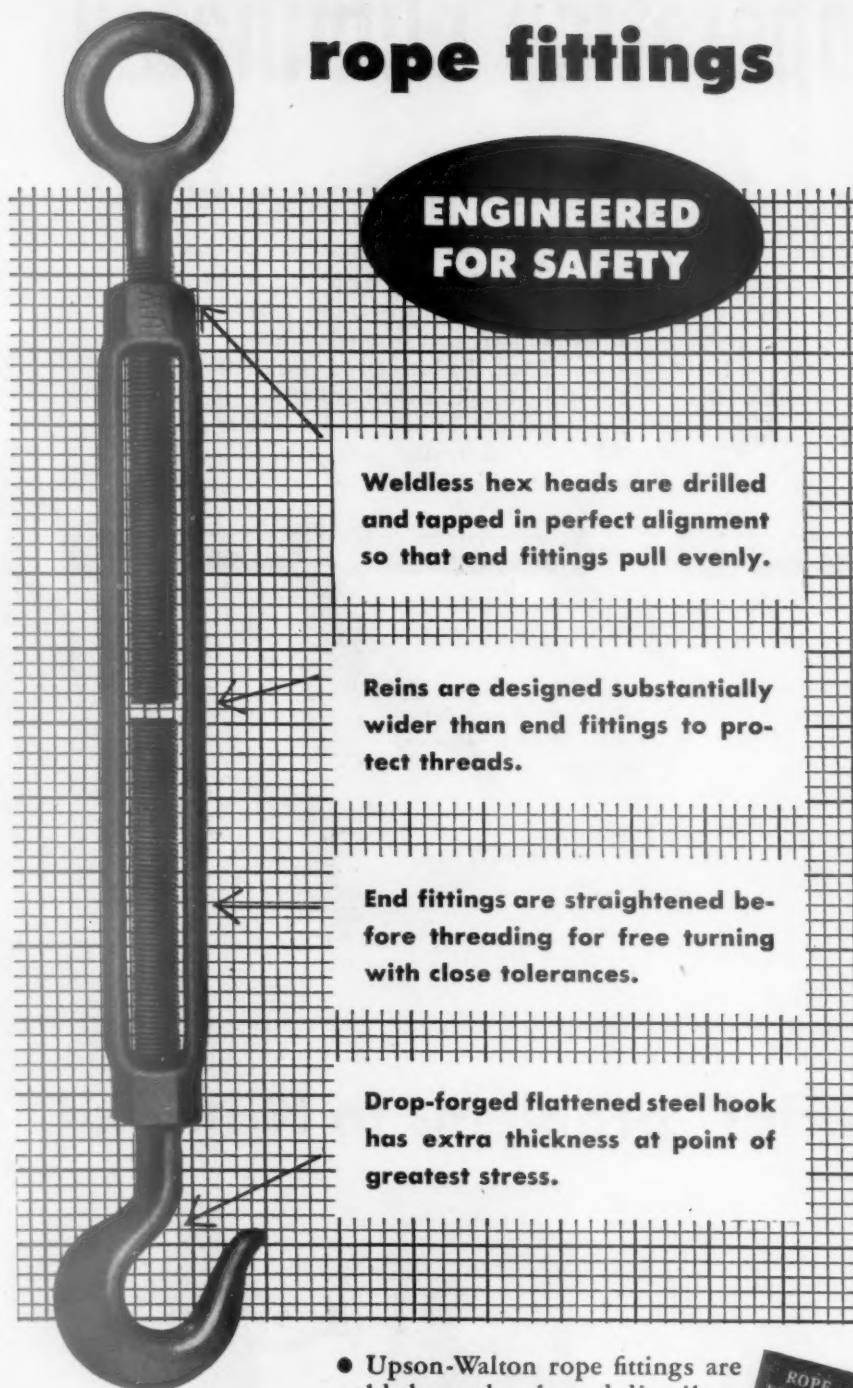


Chester Hoists



UPSON-WALTON

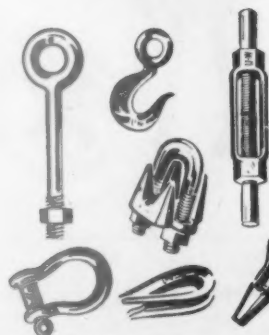
rope fittings



• Upson-Walton rope fittings are sold through selected distributors everywhere to assure you:

1. quick delivery from stock.
2. an opportunity to see Upson-Walton products before buying.
3. other valuable distributor services.

Write for free catalog.



THE UPSON-WALTON COMPANY

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New York • Chicago • Pittsburgh

YOU CAN DEPEND ON UPSON-WALTON'S LONG EXPERIENCE—ESTABLISHED 1871
For More Information Circle No. 226 on Inquiry Card—Page 17

Heavy Attendance Expected at Second District Conference

C. F. Wilson, general conference chairman, looks forward to this being one of the largest 2nd District Conferences held since the first one in 1946. Headquarters for the conference on October 27 and 28 will be the Baker Hotel in Dallas.

Well known speakers from business, NAPA, and the professional platform will be on hand with interesting information for the several hundred industrial buyers expected to attend the meeting. Bruce Henderson of Westinghouse Electric Corp. and Ted Paulson of Russell-Miller Milling Co., both former vice presidents of NAPA, will be on hand to discuss practical purchasing problems.

Speaking on business and purchasing trends will be Robert Swanton, who handles the NAPA Business Survey, and Stuart Heinritz, editor of PURCHASING. Howard Ahl, NAPA president, and George Renard, NAPA executive secretary-treasurer, will deliver interesting talks. At the Wednesday evening banquet, the speaker will be Tom Collins. A Kansas City banker, Mr. Collins is a well known after-dinner humorist.

The conference opens on Tuesday, October 26, with a Round-up Party which will last from 6-9 p. m. There will be a hospitality hour and a buffet supper. Invited are members, wives, and supply men. In addition to the Round-up Party, the ladies will be invited to private luncheons and a tour of Dallas.

1 1 1

Professor Lewis Speaks at Dayton Meeting

First meeting of the 1954-5 season was held by the Purchasing Agents Association of Dayton on September 9. Featured speaker was Professor Howard T. Lewis of Harvard's Graduate School of Business Administration. The well known expert on purchasing problems spoke on "Standard for Buying and Selling."

New members welcomed at the September meeting included: John W. Schwinn, USAF Air Materiel Command; Harold T. Hollman, Flack Equipment Co.; and Leo L. Vyszenski, Reliable Rubber Products Co.

Sponsored by the Dayton group, the new association being organized
(Please turn to page 206)

TRENTWELD tubing gives...

- *corrosion resistance
- *long service life
- *ease of cleaning
- *product protection

in Lo-Temp Evaporator

This Mojonnier Lo-Temp Evaporator is designed to remove water from heat-sensitive liquid foods, pharmaceuticals and chemicals, at temperatures as low as 40F. Heart of the evaporator is made of nests of TRENTWELD stainless steel tubing.

TRENTWELD tubing is an ideal choice for this application. For TRENTWELD stainless tubing resists the corrosive attack of both the product itself, and the ammonia refrigerant pumped inside the tubing. And TRENTWELD stainless is inert... protects the product from contamination. But that's not all—TRENTWELD comes-clean with an absolute minimum of effort.

So when you have a tubing application check first with TRENT. You'll find the largest assortment of sizes and finishes in the industry... standard sizes from 1/8" to 40" O.D. — larger sizes on special order. And remember, TRENTWELD stainless and high alloy tubing are products of tube mill specialists. You can't buy better than TRENTWELD.



TRENTWELD

STAINLESS STEEL TUBING

TRENT TUBE COMPANY, GENERAL SALES OFFICES, EAST TROY, WISCONSIN (Subsidiary of CRUCIBLE STEEL COMPANY OF AMERICA)

For More Information Circle No. 227 on Inquiry Card—Page 17

7,000

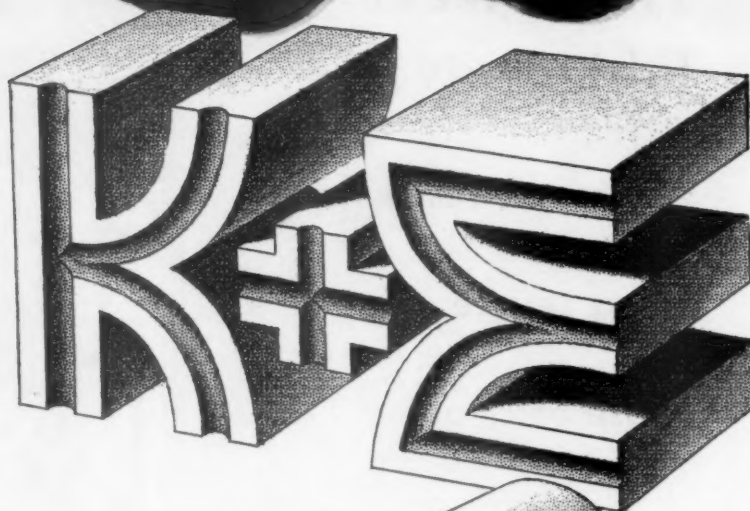
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ZEISS Ni2 SELF-LEVELING LEVEL

This amazing new instrument cuts leveling time and costs in half. It sets a line of sight precisely level *automatically*. A remarkable new invention, the Compensator, built into the telescope levels the line of sight for you in a matter of moments. It performs any kind of leveling, from rough cross sectioning to first order work. Bench-mark leveling, using two rods, is almost twice as fast with the Ni2 as with an ordinary level. Cross-sectioning with many sights from one set-up is even faster. Accurate up to ± 0.02 ft. per mile, the Ni2 is as rugged as its appearance suggests.



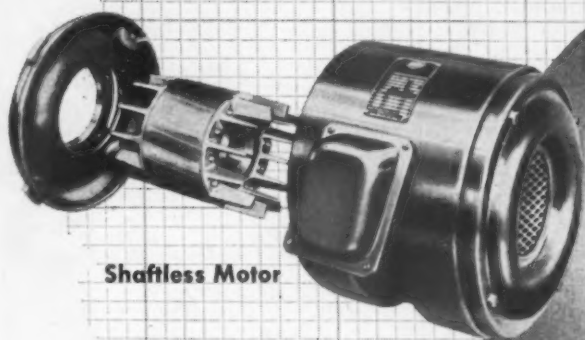
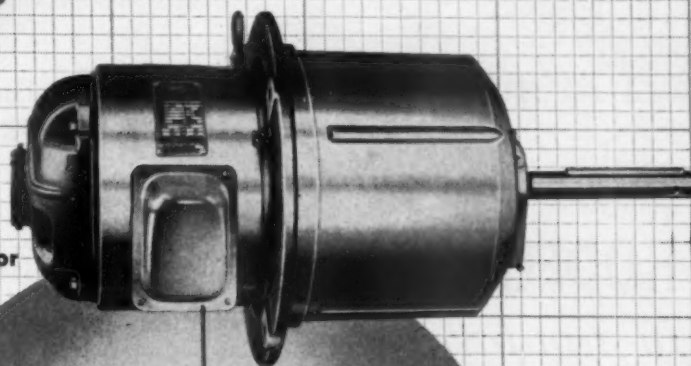
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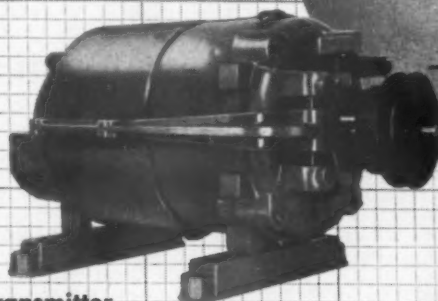
For More Information Circle No. 228 on Inquiry Card—Page 17

a motor designed
for its job
will out-perform a "standard"

Special Purpose
Extended Bearing Motor

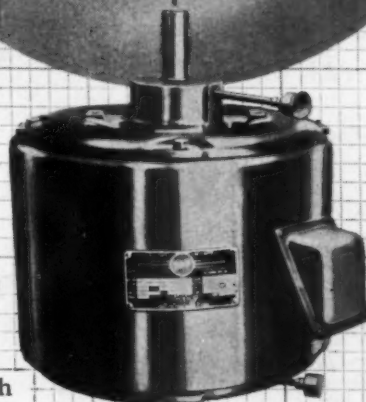


Shaftless Motor



Power Transmitter
(Clutch-Brake Motor)

Special Purpose
Vertical Motor



No standard motor can hope to match performance with a motor custom designed to meet unique requirements.

That's why Diehl lays so much emphasis on custom construction . . . why, through the years, it has geared its abilities and its facilities, its design, engineering and manufacturing functions for maximum cooperation with its customers . . . whatever the application.

DIEHL custom-tailored motors can:

Cut costs • Save space • Reduce weight • Improve safety
Simplify design • Speed production • Improve appearance

When you want a fast, thorough answer to an unusual motor problem it will pay you to consult Diehl. Name your conditions . . . Diehl will design and build to match.

DIEHL MANUFACTURING COMPANY

Electrical Division of THE SINGER MANUFACTURING COMPANY

Finderne Plant, SOMERVILLE, N. J.

Please send me the following bulletins:

- ☐ New Type "D" Motor Bulletin No. P-3304
☐ Consolidated Catalog & Price List No. P-3310

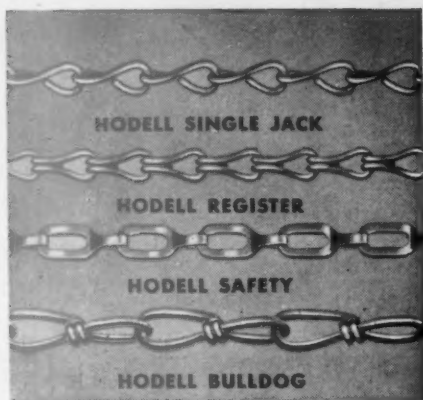
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Company _____

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INTERNAL AND FRACTIONAL HORSEPOWER MOTORS ARE AVAILABLE IN A WIDE RANGE OF TYPES AND SIZES



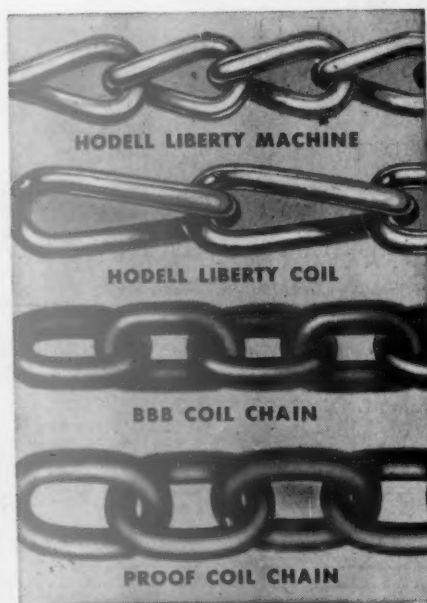
Buy dependable
HODELL CHAIN
in standard types
... or specialties

Hodell makes a quality line of dependable chain for every industrial use and can make many formed wire specialties. Or, if you need a special chain assembly, Hodell can manufacture it to your specifications. We welcome an opportunity to quote on your needs at any time. Send for the Hodell Industrial Catalog... giving full information on the complete Hodell line.

HODELL CHAIN COMPANY

Cleveland 3, Ohio

Div. of The National Screw & Mfg. Company



For More Information Circle No. 230
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(Continued from page 202)
 in Lima is nearing the application stage. To be accepted by NAPA, a new association must have 35 members. The Lima group now has 33. When its membership hits the required 35, the Lima organization will then have to serve a one year probation, after approval of its application, before becoming a full fledged member of NAPA.

1 1 1

**Chicago Association Co-Sponsors
 Navy Training Program**

The Chicago Purchasing Agents' Association are co-sponsors with the Navy Electronic Supply Office, Great Lakes, in a newly-designed training program for Navy buyers. The first session of the training program was given in the auditorium of the newly constructed Electronic Supply Office on Thursday, July 29, and will be followed by four monthly meetings.

At the initial assembly, Mr. Robert E. Schmidt, Chairman of the Education Committee, Chicago Purchasing Agents Ass'n, and Purchasing Agent of Hills-McCanna Company, manufacturers and founders, Chicago, spoke to the group of buyers, contract administration specialists and purchasing officers on "The Philosophy of Purchasing." Mr. Schmidt pointed out that, in addition to ethics, the modern purchasing agent relies heavily on value analysis and creative buying in making a decision as to what item should be purchased and from whom, particularly in a competitive buying area such as Great Lakes, which is situated half-way between Chicago and Milwaukee. Mr. Schmidt also emphasized that patriotism plays a leading part in influencing the nation's industries in bidding on government contracts.

CDR Edward T. Dobbyn, Jr., Supply Corps, U.S. Navy, Purchase Division Officer of the Electronic Supply Office, worked very closely with Mr. Schmidt in developing the training program. Additional topics which will be covered are listed below:

Oct. 28: "How to Buy Technical Equipment and Supplies", Edwin E. Swick, Director of Purchases, Du-Kane Corporation, St. Charles, Illinois.

Nov. 18: "Buying for Municipalities", R. R. Berry, Deputy Director of Purchases City of Chicago, and Instructor of Purchasing, DePaul University, Chicago.

(Please turn to page 208)



*You'll Cut Faster
 and Cut Costs*

with

**Victor
 BLADES**

The secret is simply in selecting the *right* Victor blade for the job you have to do, and one of these four is the right one—Victor "Moly"® High Speed Steel—Challenges all comparison as to economy and performance. Victor "Molyflex"® High Speed Steel—Cuts like a genuine "Moly" but is so flexible it cannot be broken in use. Victor High Speed Steel—The power blade that's unexcelled for fast cutting and durability. Victor Unbreakable High Speed Steel—Absolutely shatterproof and unbreakable when in use. Fast cutting, flexible, long-lasting.

**Your Victor Distributor
 Can Guide Your Choice**

Ask him for the Victor Metal Cutting Booklet—a concise guide to blade selection for hand, power and bandsaw work. Depend on him for quick delivery of the *right* Victor blade from local stock. Use him as your source of supply for hundreds of the other items you need to keep your production uninterrupted.

Sold Only Through Recognized Distributors

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VICTOR

SAW WORKS, INC. • MIDDLETOWN, N. Y., U. S. A.
 Makers of Hand and Power Hack Saw Blades:
 Frames: Metal & Wood Cutting Band Saw Blades.

For More Information Circle No. 231
 on Inquiry Card—Page 17

For More Information Circle No. 232
 on Inquiry Card—Page 17→

When you buy welding elbows . . .



Why take less when you can get more?

(and at the same price)

ADVANTAGES OF MIDWEST "LONG TANGENT" ELBOWS

- ★ They save pipe.
- ★ They often eliminate short nipples and their extra welds.
- ★ They save time and money in lining up and clamping pipe and fitting.
- ★ They make it easier to apply slip-on flanges.
- ★ They remove the circumferential weld from point of maximum stress and can be sleeved.
- ★ THEY COST NO MORE THAN OTHER ELBOWS.

As shown in the illustration above, Midwest "Long Tangent" welding Elbows have straight ends equal to $\frac{1}{4}$ of the nominal fitting diameter (a 12" elbow has tangents 3" long). For the reasons listed at the left, substantial savings are made on many piping systems by using Midwest "Long Tangent" Elbows. For more information about them, write for Catalog 54.

MIDWEST PIPING COMPANY, INC.

Main Office: 1450 South Second Street, St. Louis 4, Mo.

Plants: St. Louis, Passaic, Los Angeles and Boston

Sales Offices:

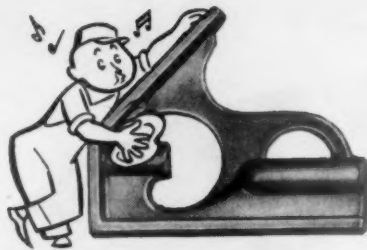
New York 7—50 Church St. • Chicago 3—79 West Monroe St.
Los Angeles 33—520 Anderson St. • Houston 2—1213 Capitol Ave.
Tulsa 3—224 Wright Bldg. • Boston 27—426 First St.
Cleveland 14—616 St. Clair Ave.

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MIDWEST

WELDING FITTINGS IMPROVE PIPING DESIGN AND REDUCE COSTS



CLEAN



BRIGHT



ACCURATE



STRONG

Clean, bright, accurate, strong — that's the story of Ritco Drop Forgings. We produce parts to your blueprint in steel or non-ferrous metals, in weights from ¼ lb. to 15 lbs.

Come to Ritco for Drop Forgings, special fasteners, and finished bolts with regular or heavy heads. Also, take advantage of our complete facilities for finishing — machining and grinding. Send blueprints and specifications for free estimates.



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FOR 120 YEARS

RITCO

Rhode Island Tool Company
148 West River Street
Providence 1, Rhode Island



Exclusive New England
Representatives for
Cleveland Cap Screw Co.

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(Continued from page 206)

In addition to personnel of the Electronic Supply Office, a delegation of Purchasing Agents from the Naval Supply Depot, Great Lakes, also attended Mr. Schmidt's lecture.

1 1 1

Elmer A. Stevens Addresses Cleveland Association

The Purchasing Agents Association of Cleveland, Inc. started its fall program of monthly meetings on Thursday, September 16, at the Hotel Carter. Speaker of the evening was Elmer A. Stevens, Treasurer of the B. F. Goodrich Company, who spoke on "Rubber-World Commodity". Mr. Stevens, formerly



Elmer A. Stevens

director of purchases of the B. F. Goodrich Company, Akron, Ohio, was named treasurer on September 1, 1952. He has been associated with the rubber company since 1928, starting in the company's rubber processing division. After assignments in the general chemical laboratories and raw materials department, he entered the purchasing division as a crude rubber buyer. In 1933 he joined the B. F. Goodrich staff in the Far East, returning to the United States in 1936. In 1940 he became managing director of Goodrich Company, Ltd., Singapore, returning to Akron in 1942 as assistant to the director of purchases, being named Director of Purchases in 1947. Mr. Stevens is a native of Manasquan, N.J., and won his athletic letter and academic honors at Yale, graduating in 1928.

Also at this meeting the association honored Scholarship and Certificate Award winners in purchasing courses sponsored by the as-

(Please turn to page 212)
For More Information Circle No. 234
on Inquiry Card—Page 17→
PURCHASING



Unsurpassed-anywhere!

IT ALL COMES DOWN to one fact...that you can always count on Roebling high carbon flat spring steel to reduce preparation time, machine stoppages and rejects to a minimum. What's more, it's made as you want it... annealed, hard rolled untempered; scaleless tempered; tempered and polished, blued or strawed.

You *pay* for the best every time you buy flat spring steel. Make sure you *get* it. Specify Roebling. John A. Roebling's Sons Corporation, Trenton 2, N. J.



ROEBLING 

A subsidiary of The Colorado Fuel and Iron Corporation



California giant Sequoias—
largest of all trees.

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Mastergauge

The leader has lengthened its lead!

From the day it was announced, the Marsh Mastergauge took the lead in the pressure gauge field. You are probably well aware of this . . . but do you realize that we have constantly given it plus qualities to still further *lengthen* its lead?

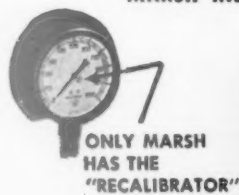
Look at the recent developments presented opposite. Unquestion-

ably these are the three greatest strides in gauge development since the creation of the Marsh "Recalibrator."

Yes, the three basic gauge components have been brought to a remarkable stage of perfection in the Mastergauge. Certainly, for every critical service there is no gauge to compare with it!

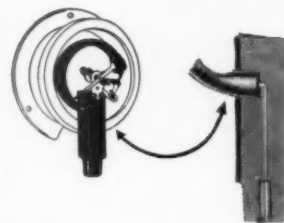
Mastergauge is standard bearer for the world's broadest line of gauges and dial thermometers, each the best of their kind in the applications for which they are recommended. Ask for data covering your specific needs.

MARSH INSTRUMENT CO. Sales Affiliate of Jas. P. Marsh Corporation
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MARSH

THE STANDARD
OF ACCURACY



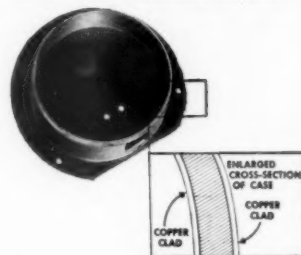
1—A better tube construction—

The Mastergauge always had the most effective joining of the bourdon tube to the socket . . . but . . . one-piece construction is *always better!* Welding these dissimilar parts posed a tough problem . . . but we finally solved it by a new process—the "Cono-weld" process—exclusively ours. The photo of an actual section shows the perfect fusion. Socket, tube—even the end-piece—are fused into one leak-tight unit.



2—A better movement—

To convert the action of the bourdon tube into accurate pressure indication, the gauge movement must be rugged, practically frictionless, highly resistant to corrosion. A self-lubricating effect is achieved in the Mastergauge movement by using alternate stainless steel and monel—gears stainless, bushings "K" monel, and so on. A distinguishing feature is the "coined" sector gear. Note broad face of gear which results from this coined extrusion.



3—A better case—

Another development that has increased Mastergauge leadership is the new copper-clad, wrought steel case. The case has the strength of steel and the resistance to corrosion of copper. It is four times as strong as a cast iron case and one-third lighter. Final finish is a handsome corrosion resistant black enamel. Every case is fitted with Marsh safety blow-out plug—a typical advancement.



When you use a power drive which is an assembly of motors, pulleys and belts, chains and sprockets, gearing, speed reducers, etc., you waste time and money in purchasing, handling and assembling these various units into the final drive.

Master power drives designed as complete units with component parts matching size for size and rating for rating offer you considerable saving in space and money . . . especially in the larger sized units.

So don't put up with "make-shift" assemblies when you can select from Master's broad line, standard units which easily combine to give you the RIGHT horsepower, the RIGHT shaft speed, the RIGHT features in one compact unit that you can use RIGHT where you want it.

Use the RIGHT power drive to increase salability of your motor driven products . . . improve the economy, safety, and productivity of your plant equipment. That's the horsesense way to use horsepower.

THE MASTER ELECTRIC COMPANY • DAYTON 1, OHIO

best for the BIG ones too



ELECTRIC MOTORS

1/8 TO 400 HORSEPOWER



CAST BRONZE

BEARINGS, BARS
AND PARTS FOR
EVERY
INDUSTRIAL USE

for immediate delivery

• Whether stock Johnson Bearings and Bars . . . or bronze castings, rough or machined . . . our large facilities make possible early delivery. We are equipped to produce castings up to 18" OD and 20" length, in a wide range of alloys. Over 920 stock sizes of General Purpose (GP) Bearings and over 400 sizes of Universal Bronze Bars are available from stock through Johnson distributors. Write for catalog on these items . . . or send inquiries on special castings and bearings.

JOHNSON BRONZE COMPANY
50 South Mill Street • New Castle, Pa.

JOHNSON  BEARINGS
Sleeve Type

Sleeve
bearing
headquarters
since 1901



All Johnson Universal Bronze Bars 13" length.

(Continued from page 208)
society at Fenn College. The Scholarship winner is Mr. Earl Soukup, a buyer for the Towmotor Corporation. Mr. Soukup has had a very outstanding record and the unusual distinction of completing the Purchasing Certificate Program in one year.

Certificate Award winners are listed below: Raymond J. Cunningham, 20670 Wilmore Ave., Euclid 23, Ohio; Joseph D. Marucci, 803 Alhambra Rd., Cleveland 10, Ohio; Douglas L. Gibson, 29123 Fuller Ave., Wickliffe, Ohio; George J. Harsch, Jr., 11913 Hamlin Ave., Cleveland 20, Ohio; Gregory Moldovan, 1869 West 22nd St., Cleveland 13, Ohio; Arthur R. Roth, 5305 Knollwood Dr., Cleveland 29, Ohio.

1 1 1

McVicar Speaker at Two Meets

First meeting of the 1954-5 season of the TenneVa Association of Purchasing Agents was held on September 16 at Kingsport, Tenn.



C. Warner McVicar

Featured speaker was C. Warner McVicar, director of purchases and traffic, Rockwell Manufacturing Co. The subject of his talk was "The Value of a Purchasing Manual to Purchasing and Management."

Mr. McVicar will also address the Central Pennsylvania Chapter of the Society for the Advancement of Management on October 21 in Dubois, Pa. His subject is "The Value of a Purchasing Manual to Management." Mr. McVicar will emphasize the proper management attitude toward the value of a purchasing manual in any company with which members of the Society might be associated.



**BITUMINOUS COALS
FOR EVERY PURPOSE**



BALTIMORE & OHIO RAILROAD

Constantly doing things—better!

**Whatever your fuel needs,
we have a coal that is**

Just the Ticket!

• In fact, you can write *your own* ticket—for the vast Bituminous fields served by the Baltimore & Ohio contain excellent coals in *wide variety*. For centuries to come, these coals will be available—a dependable source of low-cost heat and energy.

Modern mechanization at the mines assures low costs as well as uniform size and quality. The location of the fields—close to industry's front door—contributes to low transportation expense. Storage is economical because costly facilities are not required. And with the help of new combustion methods and equipment, Bituminous offers its users an increased burning potential.

ASK OUR MAN! He can give you worthwhile advice as to supply sources and burning methods for the particular coal you need. The efficiency, economy, and cleanliness of B&O Bituminous today will be a revelation!





TUBING and CONTAINERS

are produced in a wide range of types and sizes. From simple tubes through heavy wall metal end multi-purpose containers, there is a type of construction and a style of end closure exactly right for your particular purpose.

Holiday mailing, calendar shippers, plant-to-plant transport, permanent space saving storage of maps, drawings, precision metal parts, all of these are handled best in Cleveland Tubing and Containers.

Illustrated are: (from top down)

- a plain tube,
- a three-piece metal-end telescope container,
- a metal-end screw cap container,
- a cuffed mailing tube,
- a curled mailing tube.

Variations of the five types shown are available in diameters, wall thicknesses and lengths as desired.

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The **CLEVELAND CONTAINER Co.**

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• All-Fibre Cans • Combination Metal and Paper Cans
• Spirally Wound Tubes and Cores for all Purposes

PLANTS AND SALES OFFICES: Cleveland, Chicago, Detroit, Memphis, Plymouth, Wisc.,
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Prescott, Ont. • SALES OFFICE: Montreal.



More Than 100 Attend Florida Purchasing Institute

Sponsored jointly by the Purchasing Agents Association of Florida and the General Extension Division of the University of Florida, the second annual Purchasing Agents Institute for Industrial and Governmental Purchasing Agents was held in St. Petersburg. First speaker of the meeting was J. Frank Rushton, former president of the Rushton Co. His topic was "Shadows Before You."



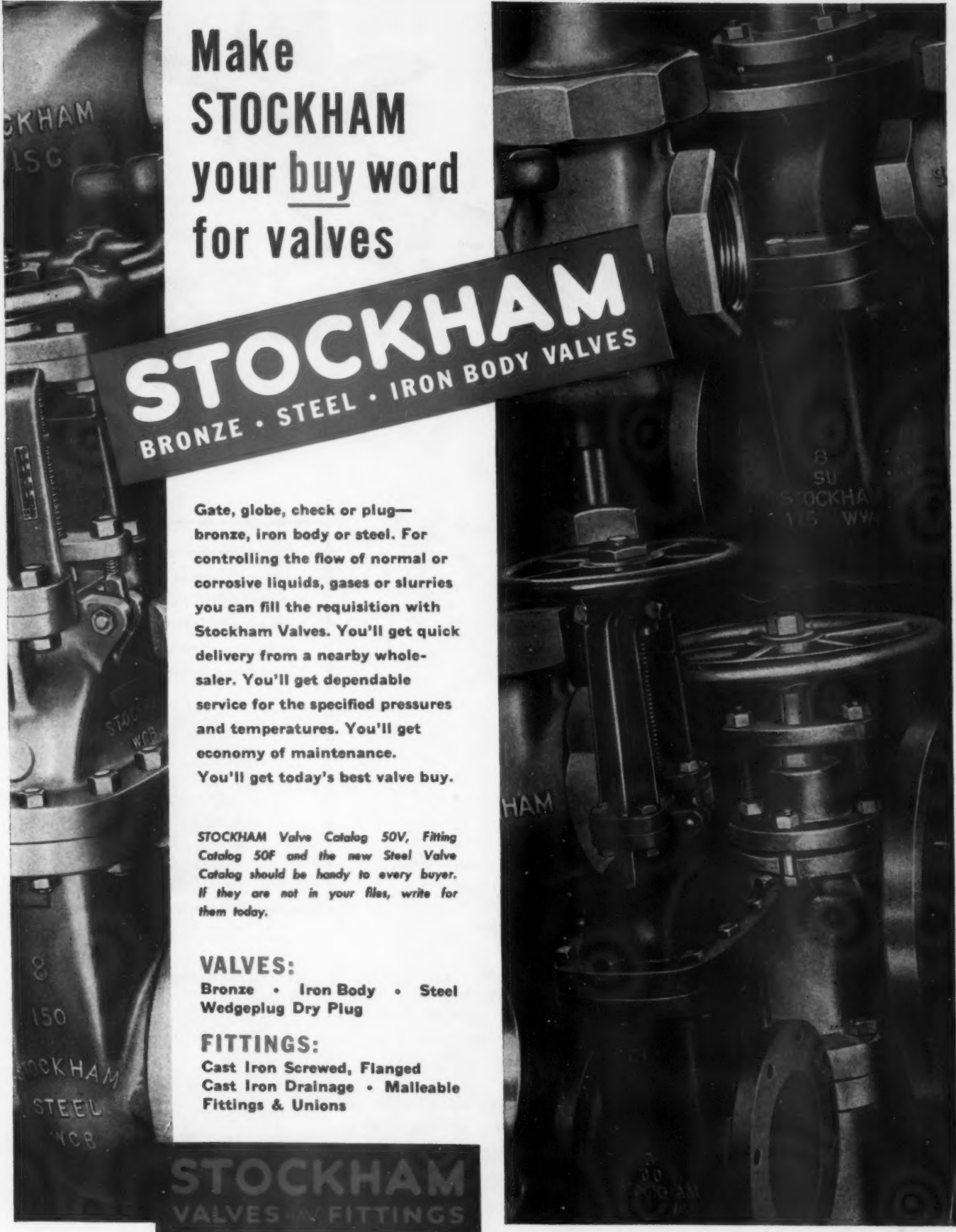
Thomas D. Jolly—his topic was "The Engineers Attitude Toward Standardization."

He was followed by Professor Thomas J. Luck of the University of Florida who outlined "The Role of Communications in Purchasing." C. P. A. George Tornwall then discussed "Cost Accounting in the Affairs of the Purchasing Agent."

In keeping with the educational theme of the conference, the second day's session was also devoted to topics designed to help the PA do a better job. Robert B. Mautz, professor of law at the University of Florida, warned of the "Legal Pitfalls in Purchasing." William F. Moshier, professor of accounting at the University of Florida, explained "Tax Problems Associated With Purchasing."

The engineer's thinking was ably outlined by Thomas D. Jolly who is vice president in charge of both purchasing and engineering at the Aluminum Company of America. Mr. Jolly's topic was "Understanding the Engineers Attitude Toward Standardization." Last speaker of the session was Henry G. Hodges, professor of management, University of Florida. His topic was "These Things You Should Apply."

Certificates were then awarded to those who had attended the In-
(Please turn to page 218)



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STOCKHAM
your buy word
for valves**

STOCKHAM
BRONZE • STEEL • IRON BODY VALVES

Gate, globe, check or plug—
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and temperatures. You'll get
economy of maintenance.
You'll get today's best valve buy.

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Catalog 50F and the new Steel Valve
Catalog should be handy to every buyer.
If they are not in your files, write for
them today.

VALVES:

Bronze • Iron Body • Steel
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Warehouse Stocks and Sales Services Strategically Located

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For More Information Circle No. 240 on Inquiry Card—Page 17



Stout "hearts" for new Navy sub killers

Patrolling endless seas in search of enemy subs . . . blasting them out of action with newest destruction devices . . . this Grumman S2F-1 "hunter-killer" depends on the stamina of twin Lycoming-built engines to keep it high and dry.

This is another Lycoming contribution to aviation progress. For Lycoming engines also fly military missions in aircraft ranging from liaison planes to trainers to helicopters. They have distinguished themselves in civilian aviation, too—particularly in single- and twin-engine planes.

Do you need this kind of dependable air-cooled power . . . or any of the diversified services listed above our signature? *Whatever your problem . . . look to Lycoming!*

*Purchasing agents
please note.*



FOR RESEARCH • FOR PRECISION PRODUCTION

LOOK TO **Lycoming**

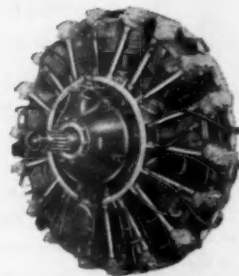
DIVISION OF



STRATFORD, CONN.

Manufacturing plants in Stratford, Conn., and Williamsport, Pa.

To power America's first anti-submarine carrier aircraft that's equipped for both search and attack, the U. S. Navy looks to Lycoming for air-cooled engines.*



*Wright-Cyclone engines built by Lycoming under license from Curtiss-Wright Corporation, Wright Aeronautical Division.

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Turbine Engineering and Research
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Complete Assemblies
Heat-Treating and Plating
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Boilers



today—it's a bigger catch with **MUSCLES OF STEEL**

Five billion pounds of fish yearly. It's a catch that would make the oldtime Gloucester fisherman gasp—yet it's all in the day's work for America's modern fishing industry. And it's a job that couldn't be handled without the aid of *muscles of steel*—indispensable wire rope.

Whether off the Newfoundland Banks, along the Gulf Coast, or in the waters of the Pacific, powerful winch-equipped trawlers depend on Wickwire Rope to haul in their heavily laden nets.

On landlubber assignments, too, Wickwire Rope has a vital role in helping American industry do a better and more efficient job. In the oil fields and the logging camps. In the mines and the quarries. On construction and highway projects. In numerous and varied materials handling operations. On all of these jobs, Wickwire Rope consistently demonstrates its ability to deliver performance that is unrivalled for long-lasting economy and reliability.



every industry benefits from wire rope

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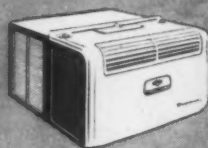
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Pressure Type
Water Coolers



Self-Contained
Air Conditioners



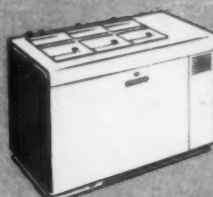
Room Air
Conditioners



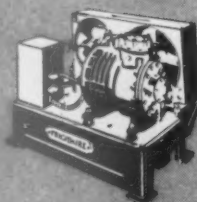
Bottle Type
Water Coolers



Reach-In
Refrigerators



Low Temperature
Cabinets



XD Motor-Miser
Compressors



Ice Cube
Makers

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More and more men who buy for industry are making Frigidaire their first source for cooling equipment of every kind. They've found it pays real returns in higher performance, lower operating and maintenance costs, as well as in real dependability.

Call the Frigidaire distributor or Factory Branch that serves your area. Or write: Frigidaire Division, Dayton 1, Ohio.

FRIGIDAIRE

Water Coolers

Air Conditioning

Refrigeration

BUILT AND BACKED BY GENERAL MOTORS

(Continued from page 214)

stitute. A buffet banquet was then held at the Tides Hotel which also served as Institute headquarters for the meetings.

1 1 1

Congressman Miller Speaker at Buffalo Meeting

Purchasing Agents Association of Buffalo opened its 1954-5 season with a topic which is of vital interest on the Niagara Frontier. Speaking on "The Record of the 83rd Congress in Relation to Power Development" was Congressman William E. Miller, 40th District, Lockport, N.Y. Congressman Miller has taken an active part in power development discussions and members found his views on private vs government ownership of power plants extremely interesting.

Featured speaker of the October meeting will be Bruce Henderson, vice president, Westinghouse Electric Corp. Prior to the meeting, a plant visit to Bethlehem Steel's giant mill in the Buffalo area has been arranged.

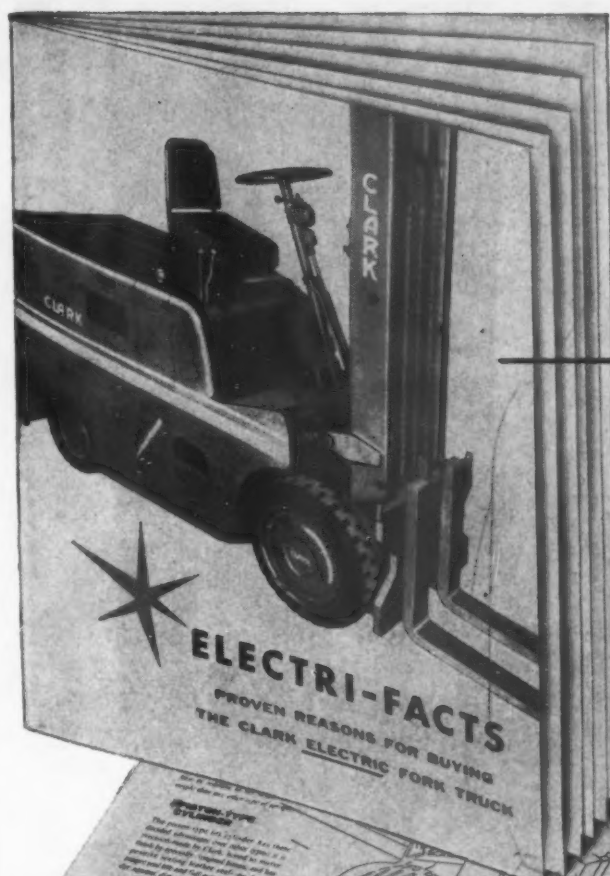
New members starting the 1954-5 season include: Gilbert E. McElheny, Spencer Kellogg & Sons; Robert A. Patterson, Oliver Gear & Machinery Co.; Lawrence G. Fischer, Chisholm-Ryder Co.; John J. Hess, Hohl Industrial Sales Co.; and Harry R. Bader, K. R. Wilson Co.

1 1 1

Chicago Women's Division

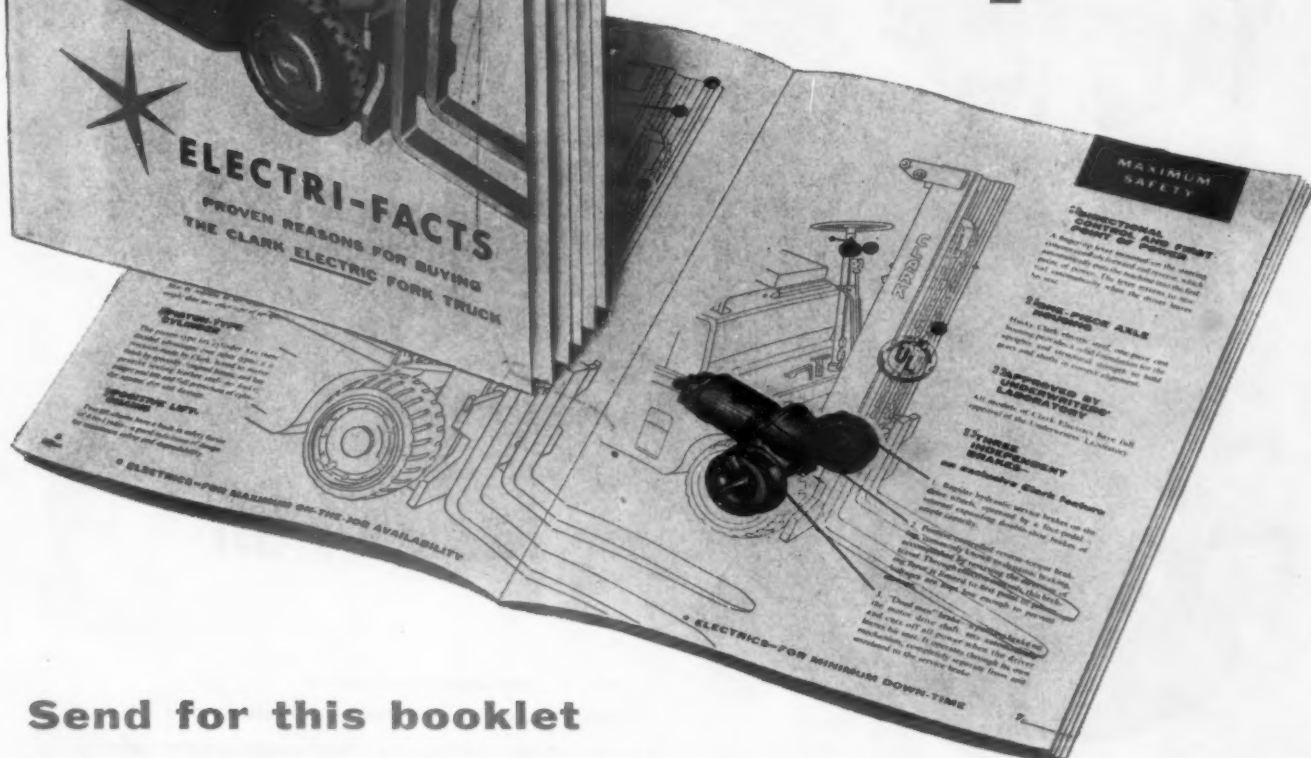
"Is There a Chance for The Economic Advancement of Women" will be the subject of a talk to be given by Betty Barton Greco before the Women's Division of the Purchasing Agents Association of Chicago at their October 14, 1954 Dinner Meeting in the Buckingham Room of the Congress Hotel. With women, according to government surveys, in possession of more than 70% of the nation's wealth and rapidly becoming the admittedly dominant factor in controlling family expenditures for all goods and services, Miss Greco's ideas should provide food for thought.

As a member of Business Research Corporation, Management Consultants, Betty Barton Greco analyzes trends in industry, as well as corporations. This experience eminently qualifies her to evaluate the trend of woman's economic advancement with the members of the Woman's Division of the Purchasing Agents of Chicago.



Do You Know Your ELECTRI-FACTS

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Send for this booklet

which shows and explains in detail the features of the Clark line of electric-powered lift trucks. The Electri-Facts Booklet disassembles the Clark electric truck to give you a mechanic's-eye view of all working parts—electrical control system, hydraulic system, power train, uprights, brakes, etc. Find out why Clark electrics give you better battery efficiency, why they operate a longer work-cycle than any other electric truck. Before you buy an electric truck, or any lift truck, you owe it to yourself to have the facts on Clark electrics. Use the coupon—send for your copy of ELECTRI-FACTS.

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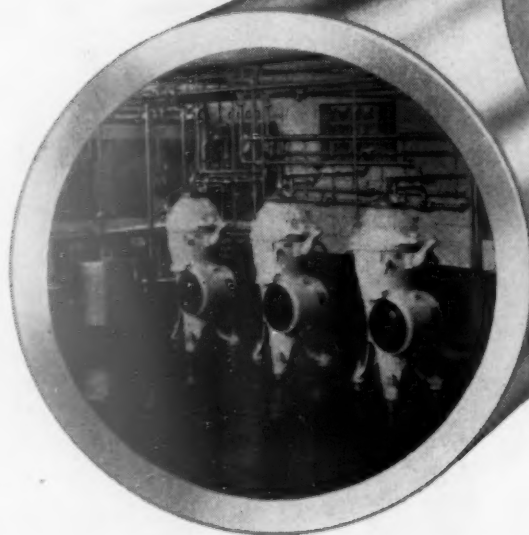
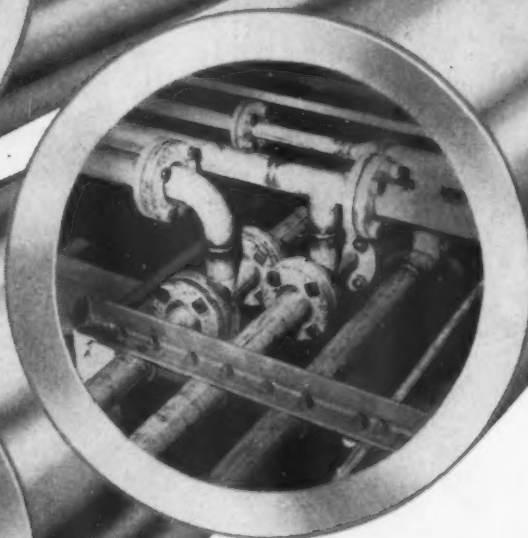
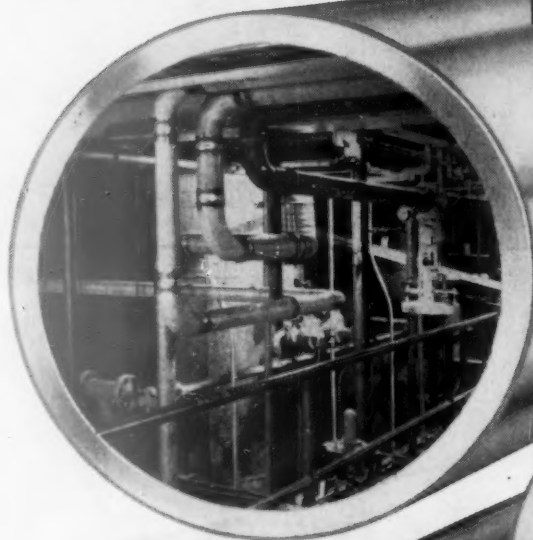
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look at all

3



Here's A Cost Comparison on All Three



Here's How All Three Compare in Weight

The Carpenter Steel Company, Alloy Tube Division, Union, N. J.
Export Dept.: The Carpenter Steel Co., Port Washington, N. Y.—"CARSTEELCO"

To get the most economical stainless pipe for handling corrosive fluids, Schedules 5, 10, and 40 should be closely compared for:

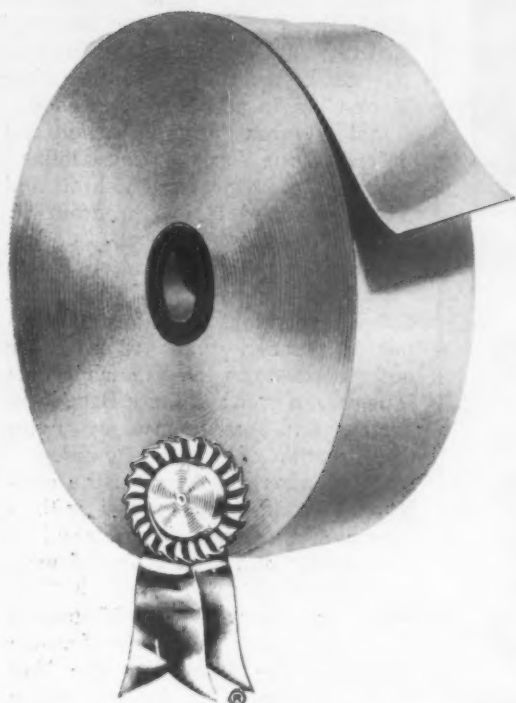
- initial cost*
- installed cost*
- ease of handling*
- flexibility of assembly*
- flow capacity*
- adequate allowable working pressure*
- effective corrosion resistance*
- service life*

Whichever Schedule—5, 10 or 40—is best for your service conditions, Carpenter makes it to meet ASTM pipe specifications. Carpenter Stainless Pipe is available in sizes up to 4 inches, depending on weight . . . in AISI stainless analyses plus Carpenter Stainless No. 20 Cb, and Carpenter Alloys B and C for super corrosion resistance. For services requiring extra smooth surfaces, Carpenter Stainless Pipe can be supplied with 80 to 320-grit polished I.D. and/or O.D. finishes. Adequate stocks are as close as your local distributor. Call him for information and time-saving delivery.

Carpenter



Stainless Tubing & Pipe



The Only Super Standard Tape with
The U. S. Testing Co. Seal of Quality!

HUDSON BLUE RIBBON

adds *Certified Performance*
to its **FOUR**
service-proven
user advantages!



Blue Ribbon's *newest* honor is U. S. Testing Company's coveted Seal of Quality — the first super standard tape to get this award! U. S. Testing bought all tapes on the open market, gave them exhaustive tests in their world-famous Hoboken, N. J. laboratories. Blue Ribbon was the *only* super standard tape awarded the famous Seal of Quality. Customers have long told us how Blue Ribbon's superiority actually saves time and money! Now, compare Blue Ribbon's advantages — advantages that make it the *first* super standard tape to receive this honor.



YOU SAVE TIME! Blue Ribbon's exclusive Supple-izing® means instant full-depth moistening . . . instant gripping! Blue Ribbon speeds output without extra personnel.



YOU SAVE MONEY! Blue Ribbon seals *faster* (with just one fast sweep of the hands). You use *less* tape when you use Blue Ribbon. Some firms report up to 30% savings on just the amount of tape used!



YOU INCREASE PRODUCTION! Blue Ribbon's fast one-sweep seal means more output per man-hour. Shipping clerks like its easy-to-use qualities. Firms report up to 20% increase in shipping room efficiency with Blue Ribbon.



YOU REDUCE DAMAGE CLAIMS! Blue Ribbon's exclusive adhesive means a more permanent seal against smoke, moisture, dust, insects and vermin. One firm reported a 90% reduction in package claims after using Blue Ribbon.



MAKE THIS TEST YOURSELF! Blue Ribbon closes cartons in seconds! Press tape flat with one fast sweep of the hands — your package is instantly sealed, ready for the toughest shipping conditions.

Blue Ribbon Super Standard Gummed Tape is another Hudson Quality Product . . . a member of the renowned family of Hudson Paper Napkins, Tissues, Towels, Orange Core Gummed Tape, Kraft Wrapping Paper, Grocery and Heavy Duty Bags, Multiwall Sacks and Laminated Wrapping Papers.

Hudson



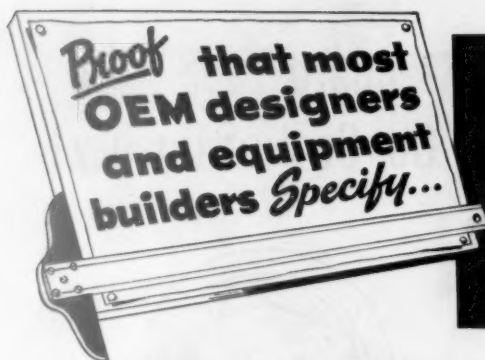
Super Standard Tape • Napkins • Standard Tape • Kraft Wrapping • Grocery Bags • Multiwall Sacks

P.S.

Prove it yourself!
Write today for free
Blue Ribbon trial roll
plus copy of *Pretty Penny*,
the story of Blue Ribbon and
the Seal of Quality.

WRITE TO HUDSON PULP &
PAPER CORP.
Dept. P-10, 477 Madison Avenue
New York 22, N.Y.

For More Information Circle No. 246 on Inquiry Card—Page 17



WISCONSIN HEAVY-DUTY Air-Cooled ENGINES

In 1953 a leading Design trade magazine conducted a survey among 1902 manufacturing plants on the use of Internal Combustion Engines of less than 60 hp., as power components in equipment made for resale.

Projected returns from 42.6% of plants contacted showed an estimated 678 plants using engines in the stated category, representing total engine purchases of 2,727,216.

Answering the question: "Who makes the Internal Combustion Engines you Use?"... Wisconsin Motor Corporation received 132 mentions, as against 105 for the second place builder, 56 for No. 3, 51 for No. 4—in a list of 41 classified engine manufacturers.

This outstanding preference for Wisconsin Heavy-Duty Air-Cooled Engines (although limited to a power range of 3 to 36 hp. in a broad survey classification including ALL engines below 60 hp.) provides tangible evidence that "WISCONSIN" rates first among men who know engines best. We'd like to count you among them.

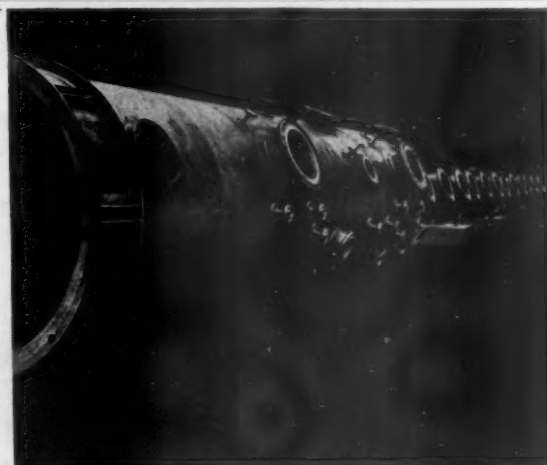


WISCONSIN MOTOR CORPORATION
World's Largest Builders of Heavy-Duty Air-Cooled Engines
MILWAUKEE 46, WISCONSIN

For More Information Circle No. 247 on Inquiry Card—Page 17

NO DESIGN TOO COMPLICATED

Downingtown-built atmospheric stripper and accumulator column, 6' 6" i.d. by 3' 10" i.d. by 76' 10" l. This complex design required extensive use of solid Monel and Monel clad materials.



Order plate fabrication from Downingtown Iron Works. That's the easy way to turn your complex designs into smooth-working process equipment—the sure way to be sure of skillful workmanship in every detail.

Downingtown is thoroughly experienced in fabricating pressure vessels from various grades of carbon steel, stainless steels, nickel clad, stainless clad, Monel clad, cupro nickel, aluminum and other materials. We've developed

special welding procedures—approved by ASME for code work—which enable us to produce sound welds which are extra strong and extra neat. Welds are X-ray inspected as required.

We're set up to fabricate pressure vessels of all kinds in full compliance with ASME and other code requirements. Our experienced Engineering Department will be glad to work with you on your next project. Write for helpful literature.



DOWNTOWN IRON WORKS, INC.

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STORAGE TANKS—STEEL AND ALLOY PLATE FABRICATION
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New York office: 52 Vanderbilt Avenue, New York 17, N.Y.

Division of:

PRESSED STEEL TANK COMPANY

Manufacturer of Hackney Products
Milwaukee 14, Wisconsin

CONTAINERS AND PRESSURE VESSELS FOR GASES, LIQUIDS AND SOLIDS

For More Information Circle No. 248 on Inquiry Card—Page 17

More Value for the Tax Dollar Theme of NIGP Conference

Headquarters for the Ninth Annual Conference of the National Institute of Governmental Purchasing will be the Statler Hotel in New York City. In addition to an educational program designed to help get "More Value for the Tax Dollar," there will be a products exhibit and a well-planned ladies' program.

The meeting begins on Sunday, October 10 with registration and a "brunch" for wives of delegates. Sunday evening, an informal supper is planned which will feature entertainment by the Victor Herbert Musicales, a group of forty Broadway singers and instrumentalists under the direction of Charles Peterson.

On Monday, October 11, the conference is officially opened with a message of greeting from President Eisenhower and an address of welcome by officials of New York City. NIGP President C. L. Magnuson will then report on the conference theme, "More Value for the Tax Dollar." Reports on federal excise taxes, federal surplus property, and the development and use of standard specifications will be delivered by the appropriate NIGP committees.

The official luncheon on Monday will feature a talk by Stuart F. Heinritz, editor of *PURCHASING*. In the afternoon a seminar, "Survey of Market Conditions," will be conducted by members of the staff of the Bureau of Purchase of New York City. Open to full general discussion from the floor, it will cover metals, textiles, machinery, food, drugs, pharmaceuticals, and the second-hand market.

The Tuesday session opens with a breakfast meeting on "Public Purchasing Ideas and Suggestions." In order that mutual problems can more readily be discussed, delegates will be separated for this meeting. One section will be for PA's serving populations greater than 150,000 and the other for those serving less than 150,000 people.

Guest speaker at lunch will be Roger Gay, president of Bristol Brass Corp. and the American Standards Association. Delegates will then have their choice of a number of one-hour round table discussion including: "Stores and Inventory Control," "Application of Business Law to Public Purchasing," "Development and Use of Requirement Supply Contracts," "Pur-

(Please turn to page 226)

For More Information Circle No. 249
on Inquiry Card—Page 17→

PURCHASING



ATTRACT
ATTENTION

SUBTRACT
SHIPPING COSTS



COUNTERACT
DAMAGE LOSSES



HINDE & DAUCH

Authority on Packaging

12 FACTORIES • 40 SALES OFFICES

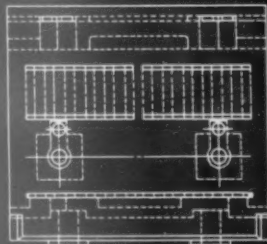
Write for booklet, "How To Merchandise with Corrugated Boxes." Hinde & Dauch, Sandusky 26, Ohio



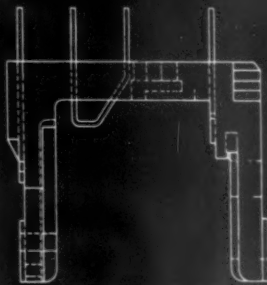
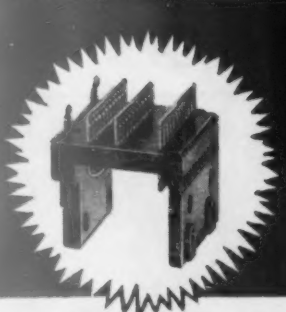


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For More Information Circle No. 250 on Inquiry Card—Page 17



**Cut your scrap loss
Use AMPCO* Grade 24 dies
to eliminate galling, loading**

***If** you are drawing or forming stainless consider this: One manufacturer cut his reject rate from 25% to less than 1% just by switching to Ampco Grade 24 dies. You can save too — here's why: Ampco Grade 24 dies eliminate loading, galling, scratches, die marks. They have little or no pickup. This means far longer runs without redressing.

Seventy-two sizes of Grade 24 die blanks are now available from stock at new low prices. They include centrifugally-cast rings, solid rounds, and rectangular shapes in commonly used sizes.

Don't take the brunt of high forming, drawing, or bending costs. Get full information on Grade 24 Die Blanks now. See your distributor or write Ampco, Milwaukee.

*Reg. U. S. Pat. Off.



Ampco Metal, Inc.

Dept. P-10, Milwaukee 46, Wisconsin
West Coast Plant • Burbank, Calif.

For More Information Circle No. 251 on Inquiry Card—Page 17

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Prompt Delivery for Every Need!**

Complete facilities, including a fully-equipped shop to make necessary tools and dies, are at your service to produce the finest plates of every type:

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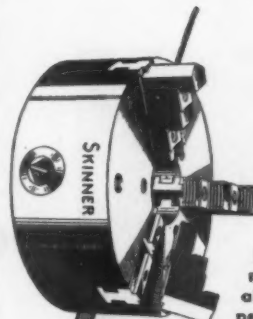
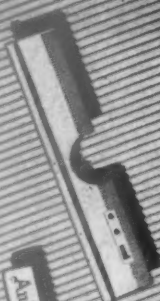
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Decorative Bezels, Escutcheons, Intricate Formings

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The modern, precision-built Skinner chuck line includes types for light, medium and heavy duty, in a wide range of sizes. These rugged, positive-gripping chucks are available in 3-jaw universal scroll, 4-jaw independent, and power models, plus a complete line of air cylinders and other power chucking equipment.

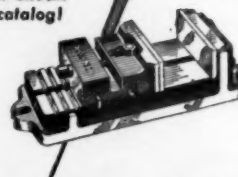
Chucks SKINNER Vises

Skinner precision machine vises are unequalled for fast, positive gripping action. They are available in several models, with either plain or swivel base, to handle all types of milling, drilling, tapping, shaping, etc. Your Skinner dealer will be pleased to give details on the complete line of Skinner Chucks and Vises—ask him for free general catalog!



**THE GREST
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Hand and Power Operated
Machine Chucks
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THE SKINNER CHUCK COMPANY

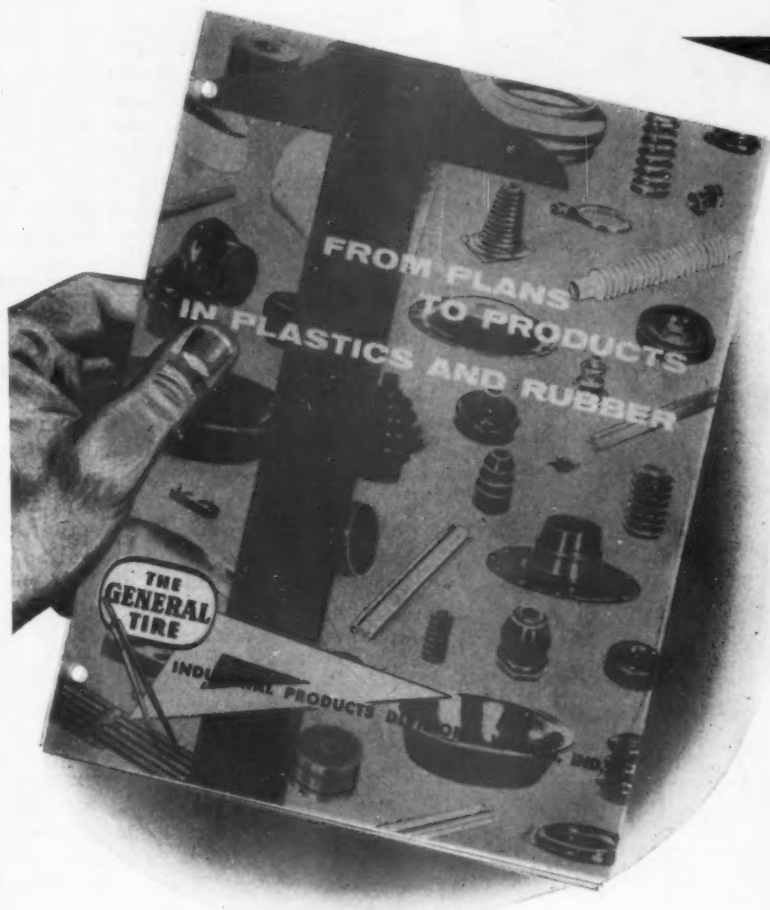
214 Edgewood Ave., New Britain, Conn., U. S. A.

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For More Information Circle No. 253 on Inquiry Card—Page 17
PURCHASING

Here's Valuable Buying Information on

GENERAL'S INDUSTRIAL PRODUCTS DIVISION



This free booklet explains General's custom design and production service on extruded rubber and plastic, molded rubber and fiberglass, Silentbloc vibration and shock mounts, panel mounts, metal stampings, and rubber-to-metal parts. As part of this made-to-order service we utilize our own tool and die-making facilities, self-designed molding and extruding machinery, and full scale quality control safeguards at every phase of manufacture.

Why not investigate this proven source of supply? No obligation, of course. Just fill out the coupon below.

Here are some of our many products now serving and saving in industry

Silentbloc vibration and shock mountings
Silentbloc bushings
Silentbloc bearings

Oil & hydraulic seals
Bonded to metal rubber parts
Hydraulic brake parts

Metal stampings
Extruded & molded rubber
Extruded plastic

Polyester glass laminates
Sponge rubber
Glass run channel

"From Plans to Products in Plastics and Rubber"



The General Tire & Rubber Company
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Wabash, Indiana

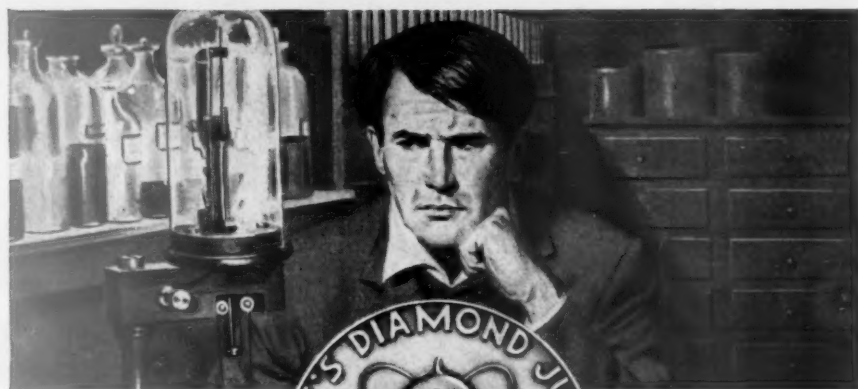
- ☐ Send booklet on your full line of custom design and produced products (4252)
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P-10-54

During this Diamond Jubilee of Light...



1879



1954



Sylvania seeks still greater LIGHTING PROGRESS

Since 1901, Sylvania has pioneered in the development and improvement of incandescent lighting. Year by year, improvements in materials, methods, and testing techniques have brought about the Sylvania bulbs, well known today as "The Best Light in Sight."

In 1939, Sylvania introduced its first fluorescent lamp. And again, continuous laboratory research and improved methods have paid off in far superior

products . . . lamps which give more lumens of light per dollar throughout their life.

Today, at the 75th anniversary of electric light, Sylvania lighting engineers are working toward still greater achievements . . . endeavoring to bring more efficient, more economical light to homes, schools, commercial and industrial organizations throughout the world.

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LIGHTING • RADIO • ELECTRONICS • TELEVISION

For More Information Circle No. 255 on Inquiry Card—Page 17

(Continued from page 222)

chase of Special Purpose Equipment Including Fire Apparatus, Fire Hose, Garbage & Refuse Trucks, etc," "Small Orders," and "Pick-up and Emergency Orders."

The final day of the conference, Wednesday, October 13, will start with a breakfast meeting similar to the one held Tuesday. Topics covered before adjournment include: "Microfilming Public Records and Documents," "Development of Preferred Standards in a Public Purchasing Agency," and a clinic on "Organization and Administration of Public Purchasing Departments."

Delegates are urged to bring their wives to this four-day conference since a special program has been arranged for them. On Monday, after attending the official luncheon, the ladies will be conducted through the United Nations building. At a tea, they will meet the American delegates to the UN.

A private viewing of the NBC-TV show, "Home" has been arranged on Tuesday. After the program, the ladies will meet Arlene Francis and others in the cast. They will then attend the official NIGP luncheon and be taken on a sightseeing tour of lower Manhattan including Greenwich Village, Chinatown, and Wall Street. Wednesday's activities include a morning show at the Radio City Music Hall and a tour of the S. S. United States, America's newest, and largest luxury liner.

1 1 1

New Orleans Association

Louis H. Pilie C. P. A. was featured speaker at the September meeting of the Purchasing Agents Association of New Orleans. He spoke on a subject with which he is well acquainted, "Accounting as it Pertains to Purchasing."

1 1 1

New Toledo Officers

Robert M. Wiscochil is the 1954-5 president of the Toledo Association of Purchasing Agents. He was also recently appointed purchasing agent for Owens-Illinois Glass Co.'s new Technical Center. Previously, he was PA for the Owens-Illinois Kimble Glass Co. plant. Mr. Wiscochil succeeds Frank Sayre who becomes national director. Other officers are: Max Thayer, first vice president; Victor Miller, second vice president; Mel Schneider, secretary-treasurer; and Charles Thompson and Charles Keller, directors.

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PURCHASING



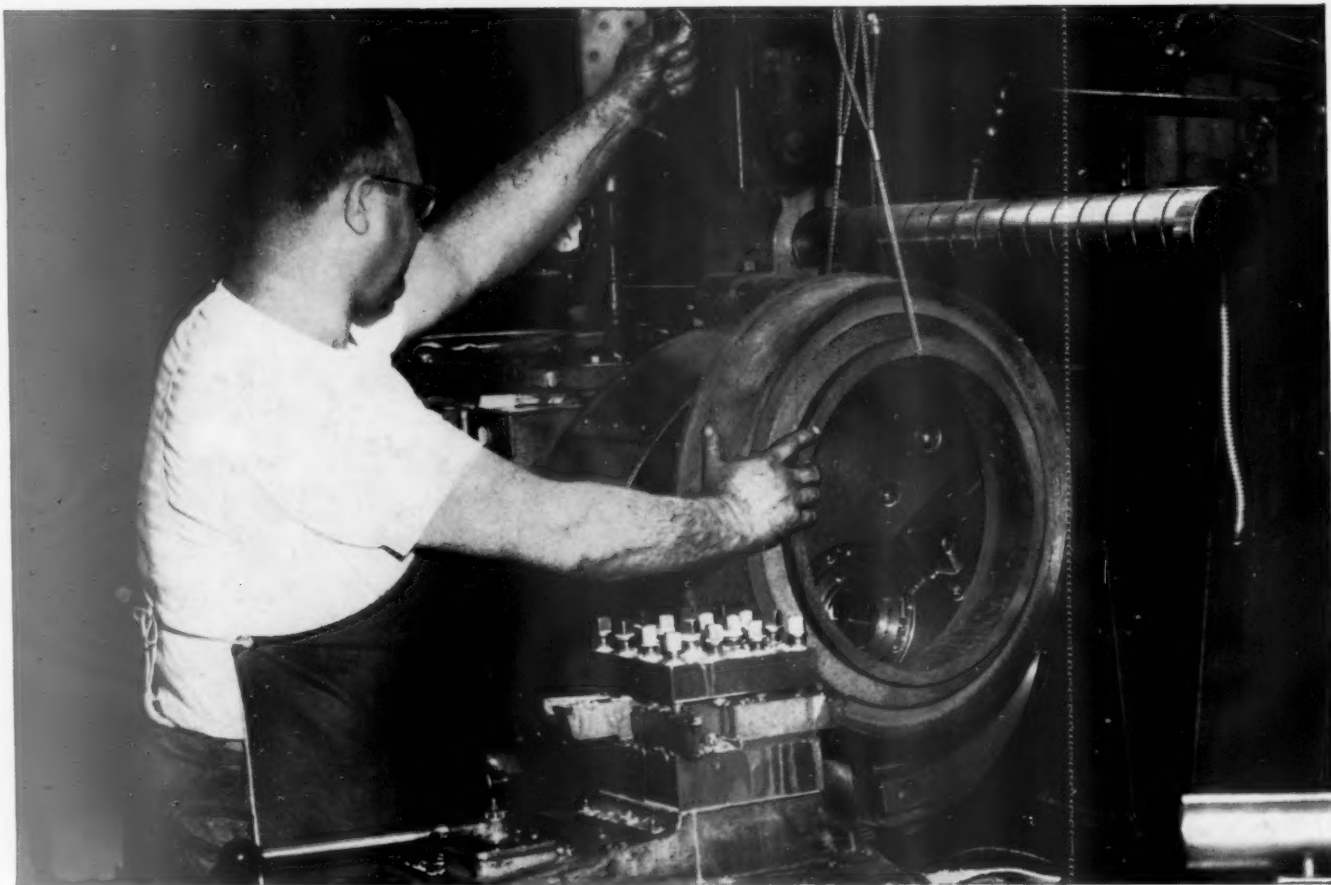
Sulfuric acid goes hungry here

Takes a pretty tough alloy to keep sulfuric acid on a starvation diet.

Yet these 8" gate valves of corrosion-resistant *Aloyco 20* do just that. They control the acid flow to four large absorbing towers in U.S. Industrial Chemicals' new 300-ton acid plant. Built by Leonard Construction Company at Tuscola, Illinois, it supplies acid for National Petro-Chemicals Corporation and the general market. *Aloyco 20* valves are standard throughout the plant for handling sulfuric acid.

Here, as in scores of industrial processing plants, Aloyco Valves speed the flow of chemical progress. Alloy Steel Products Co., Inc., 1301 West Elizabeth Avenue, Linden, New Jersey. 4.4





Circular blank being positioned for machining at a General Electric plant.

So Many Uses for These Sturdy, Low-Cost Blanks

If the products you make require the use of circular steel blanks, we have something that will interest you. We mean Bethlehem's circular forgings, as they are known to the trade. Actually, these strong, homogeneous blanks are both forged and rolled, with the attendant benefits of the two-way process.

Customers use them for making gears, including spur, bevel, and her-

ringbone; crane-track wheels, end rings, sheave wheels, turbine rotors, flywheels, tire molds and rings, industrial wheels, pistons, clutch drums, and similar parts. For all such applications Bethlehem blanks are the solid, logical choice—the ideal choice, really.

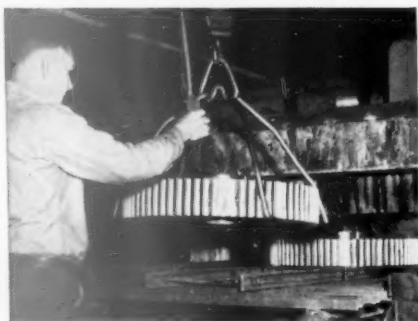
We have mentioned that they are strong. Other advantages include excellent grain flow and uniform density of metal. Because of this latter feature, machinists can take cuts of required depth with confidence; fewer finishing cuts are required, and the cutting speed is often higher.

Your own firm can probably find plenty of uses for these sturdy forged-and-rolled steel blanks. They are available in a wide range of sections, and they can be furnished untreated or heat-treated, as you prefer. Sizes run from 10 in. to 42 in. OD.

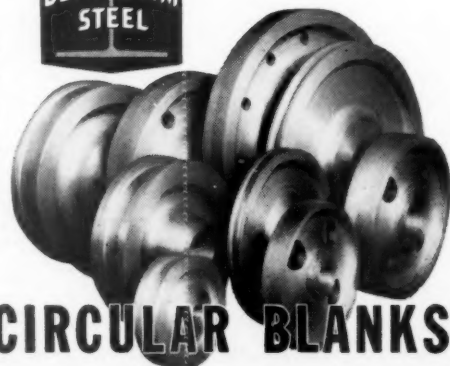
We're always glad to tell you the full story, any time you wish. But before we do, perhaps you'd like to send for our Booklet 216. It shows how the blanks are made, and how they are used by many well-known companies. Write for a copy today.

BETHLEHEM STEEL COMPANY
BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. Export Distributor: Bethlehem Steel Export Corporation



Large spur gears made from Bethlehem blanks.



BETHLEHEM FORGED-AND-ROLLED CIRCULAR BLANKS

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For More Information Circle No. 258 on Inquiry Card—Page 17
PURCHASING



ANY WAY YOU LOOK AT IT...

from
**PRECISION
GRINDING to
ROUGH SNAGGING**

SIMONDS
ABRASIVE CO.

Grinding Wheels

give superior results

Accuracy of finish—or top tonnage ground! Just name your grinding need. There's a Simonds Wheel exactly right for the job. Right in grain and grade. Correct in shape and size. Dependable in action and economical in wheel wear. Write for free data book and name of your Simonds distributor.

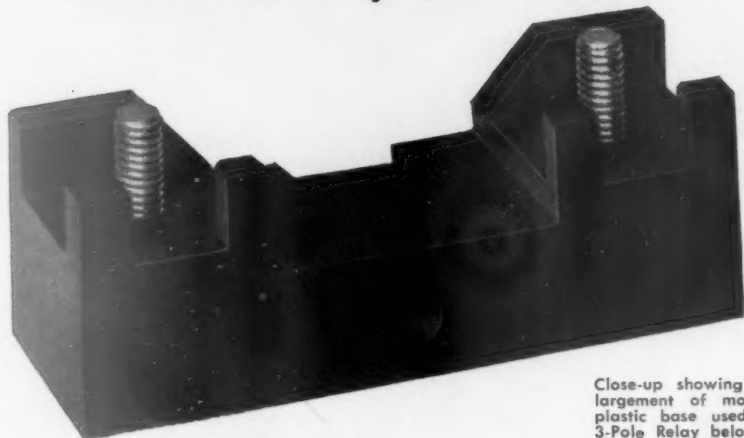
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KUHN & JACOB

molds this plastic base



Close-up showing enlargement of molded plastic base used on 3-Pole Relay below.

for Ebert Mercury Plunger Relays

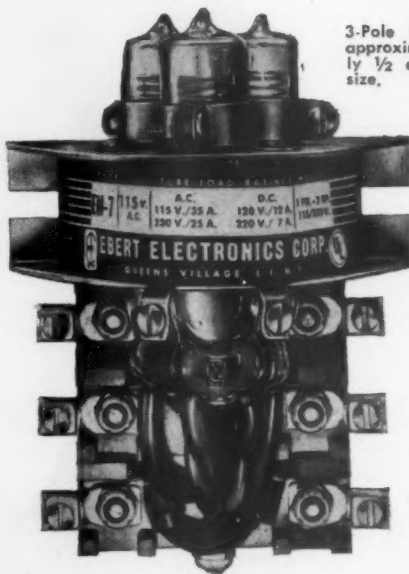
SHOWN BELOW, MADE BY



EBERT ELECTRONICS CORP.
QUEENS VILLAGE, N.Y.

Accurately made to exact specifications, the Plastic Base shown above with inserts molded in is one of the reasons for the superior quality of Ebert Relays, which are reported to give millions of trouble-free operations. At K & J, designing, mold-making and molding are all so well interrelated that the end product is certain to give complete satisfaction at all times.

A recent change in design of the plastic base makes for greater ease of installation. K & J works closely with the customer in developing and improving the product for increased sales appeal.



3-Pole Relay approximately 1/2 actual size.

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For More Information Circle No. 259 on Inquiry Card—Page 17

Rochester Ass'n Announces Purchasing Course

The 15th annual purchasing course sponsored by the Purchasing Agents Association of Rochester started September 23 at the University of Rochester. Instructor is W. B. "Pete" Wight. Covered are all of the fundamentals of sound purchasing including purchasing policies and procedures, quality control, value analysis, and market analysis. The Rochester Association is again offering, as a prize, tuition for the second semester to the student having the highest class average in his first semester's work.

Los Angeles Ass'n Meets

The Purchasing Agents' Association of Los Angeles, Inc., started their 1954-1955 activities with a dinner meeting 6:30 P.M., September 9, 1954 at the Los Angeles Elks Club.

John Hairgrove, purchasing agent of the Braun Corporation, the new program chairman, presented as the speaker of the evening, John V. Vaughn, president, Sillers Paint and Varnish Company. His subject was "Business Needs Better Informed Executives"—with special emphasis on broadening their knowledge of other departments and over-all company operations and policies.

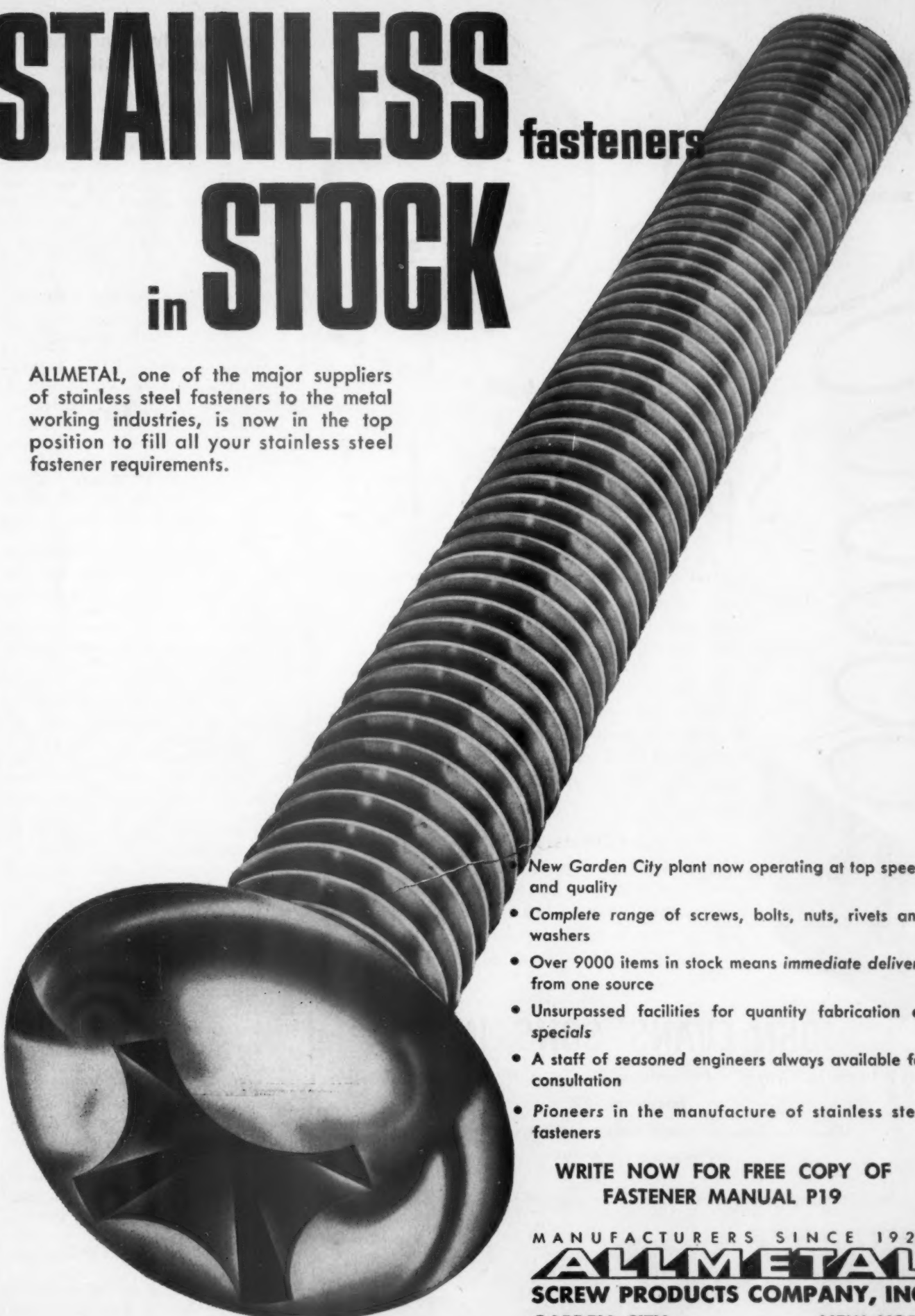
The newly elected Board of Directors presided for the first time. They are: David L. Wilt, president, University of California; John R. Hairgrove, first vice president, Braun Corporation; E. Benton Long, second vice president, United States Lime Products; S. H. Bellue, secretary, Hughes Aircraft Company; Frank T. Henry, senior director, Arden Farms Company; William E. Hayes, junior director, Consolidated Engineering Corporation; and William T. Reynolds, national director, Los Angeles Transit Lines.

John A. Hill Talks to Chicago Ass'n

It was Executives' Night for the Purchasing Agents Association of Chicago on September 9. Members, in addition to bringing executives from their company, were also invited to bring along buyers and assistants. The speaker, in line with the theme of the meeting, was one of America's top business executives. John A. Hill, president of the Air Reduction Co. spoke on "The Purchasing Revolution."

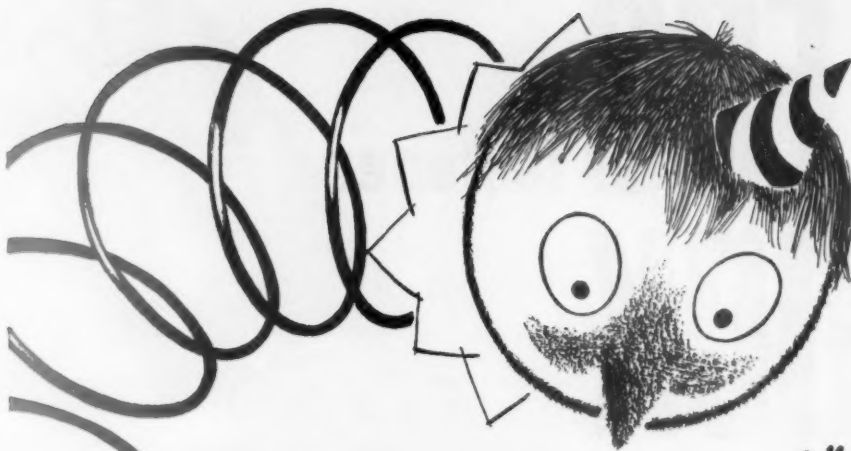
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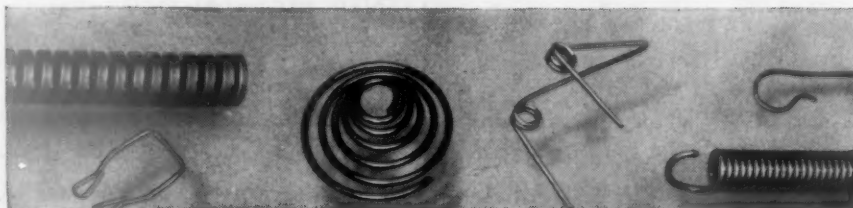
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For More Information Circle No. 261 on Inquiry Card—Page 17

Twin City Ass'n Starts 1954-5 Season

September 8 was the date of the first meeting of the Twin City Association of Purchasing Agents since the summer recess. Discussed at the pre-meeting huddle were "The Purchasing Department's Contribution to Cost Reduction" and "The Small Order Problem." Following dinner, the David White Co. presented a program entitled "3 D in Industry and Travel." In addition, there was a discussion of commodities.

On September 28, the University of Minnesota began a course in "Purchasing Principles and Practices." Conducted by Professor R. J. Holloway, the course will feature discussions of actual purchasing problems in addition to covering the basic fundamentals and principles of purchasing. Members of the Twin City Association will occasionally serve as guest speakers to the class.

Twin City membership continues to grow. Recent additions include: Randy Herman, E. J. Longyear Co.; Wallace L. Anderson, Laharco Industries; Walter E. Haase, Bureau of Engraving; E. L. Johnson, Minneapolis Honeywell Aero Division; W. Evert Welch, Minneapolis Honeywell Aero Division; J. D. Perkins, Minnesota Paints Inc.; John P. Bender, Northern States Power Co.; Donald P. Ewert, Bemis Bros. Bag Co.; John E. Wallin, Arlington Corp.; Floyd H. Ohlson, Prudential Insurance Co.; Lyle E. Kinvig, City of St. Paul; E. L. Gruenhagen, J. F. Quest Foundry Co.; and John W. Douglas, Lithium Corp of America.

1 1 1

Dallas Association Meets

Purchasing Agents Association of Dallas starts the 1954-5 season with 212 members on its roster. First regular meeting since the summer recess was held September 9 at the Melrose Hotel. Jim Walter, vice chairman, Educational Committee, District 2, N. A. P. A., was the featured speaker. His topic was the "Educational Program 1954-5."

On September 23, another meeting was held. Featured speaker was Frederick M. Carlson, economist, Dresser Industries Inc. Mr. Carlson's subject was "The Current Economic Outlook."

New additions to the Dallas roster are: Frank Swain, Southern Tube
(Please turn to page 234)



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Insist on genuine Hyatts! When you buy the bearings in the yellow and blue Hyatt packages, you're getting exact duplicates of original, specified bearings. Hyatt Hy-Loads, preferred for the vital load-carrying positions, are factory-installed in thousands of vehicles every day. And the new self-aligning, dual-purpose, Barrel Bearings—built only by Hyatt—are now widely used in passenger cars, trucks and farm machinery. Take a tip from the factory specialists—always replace a Hyatt with a Hyatt!

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(Continued from page 232)

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1 1 1

North Jersey Luncheon Club

Russ B. Walworth, purchasing agent for Air Associates' Electronic Equipment Division in Orange, N.J. was key speaker at a meeting of the North Jersey Luncheon Club of the Purchasing Agents Association of New York at Newark's Robert Treat Hotel on September 8, 1954. Thirty to forty purchasing agents from major northern New Jersey companies gathered to hear Mr. Walworth speak on "My Company, Its Products, and What I Buy."

1 1 1

Washington PA's Attend B. C. Fishing Party

Members of the Purchasing Agents Association of Washington were guests of the British Columbia Association at the annual fishing derby at Horseshoe Bay. Following six hours of fishing, there was a dinner at Sewell's Lodge.

The 1954-5 season of the Washington Association got off to a good start at the opening meeting on September 9. Featured speaker was Cy Snyder, director of art and design, Container Corporation of America. In addition there was a program of top-notch entertainment.

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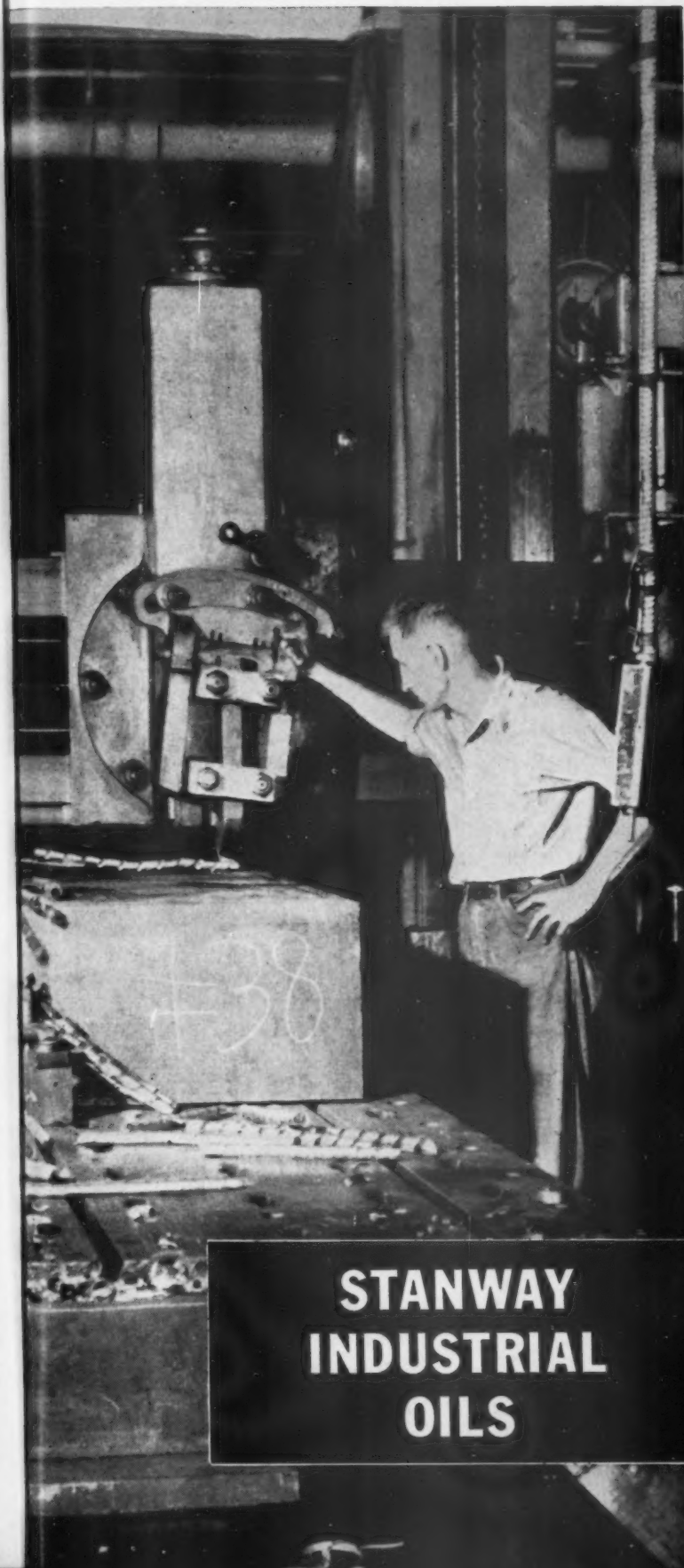
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PAGE 17

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Twin Cities Association and Univ. of Minnesota to Hold "Seminar for Purchasing" October 18-19

The University of Minnesota, in conjunction with the Twin Cities Association of Purchasing Agents will hold a "Seminar for Purchasing" at the University on October 18 and 19.

The first session of the seminar will be devoted to "Forecasting Economic Trends." Among the speakers will be Prof. Frank Boddy of the University's School of Business; Dr. Oscar Litterer, economist for the Ninth District Federal Reserve Bank; and Paul V. Farrell, managing editor of PURCHASING. Dean R. L. Kozelka will be moderator.

The second session, on "Inventory Control" will feature talks by Ira G. Fox, Westinghouse Electric Corp., and E. L. Yungk, also of Westinghouse. Bert Westhoff, president of the Association, will moderate.

"Purchasing Personnel and People" will be the subject of the third session, with Messrs. R. J. Holloway of the University; Prof. Herbert Heneman; Ted Lindbom of Midland Cooperatives and George Prouty, Munsingwear.

The fourth session will cover "Legals Aspects of Purchasing Under Federal Anti-Trust Laws." Featured speakers will be Attorneys John Dorsey and John R. Goetz, and Monrad Paulsen, of the University law school. Basil Nelson, P.A. for Northern States Power Co., will be moderator.

The seminar will close with a dinner meeting at the Hotel Nicolet. Guest speaker will be Harry Brockel, Port Director of Milwaukee.

1 1 1

Alcoa Purchasing Conference

The purchasing department of Aluminum Company of America took advantage of the N.A.P.A. gathering in Chicago last May to stage a 2-day "Alcoa Purchasing Conference" at the Conrad Hilton Hotel on Saturday and Sunday immediately preceding the national (Please turn to page 240)

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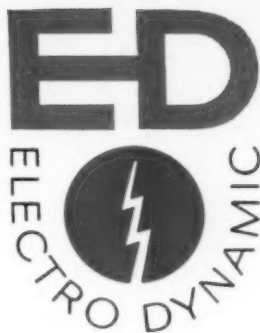
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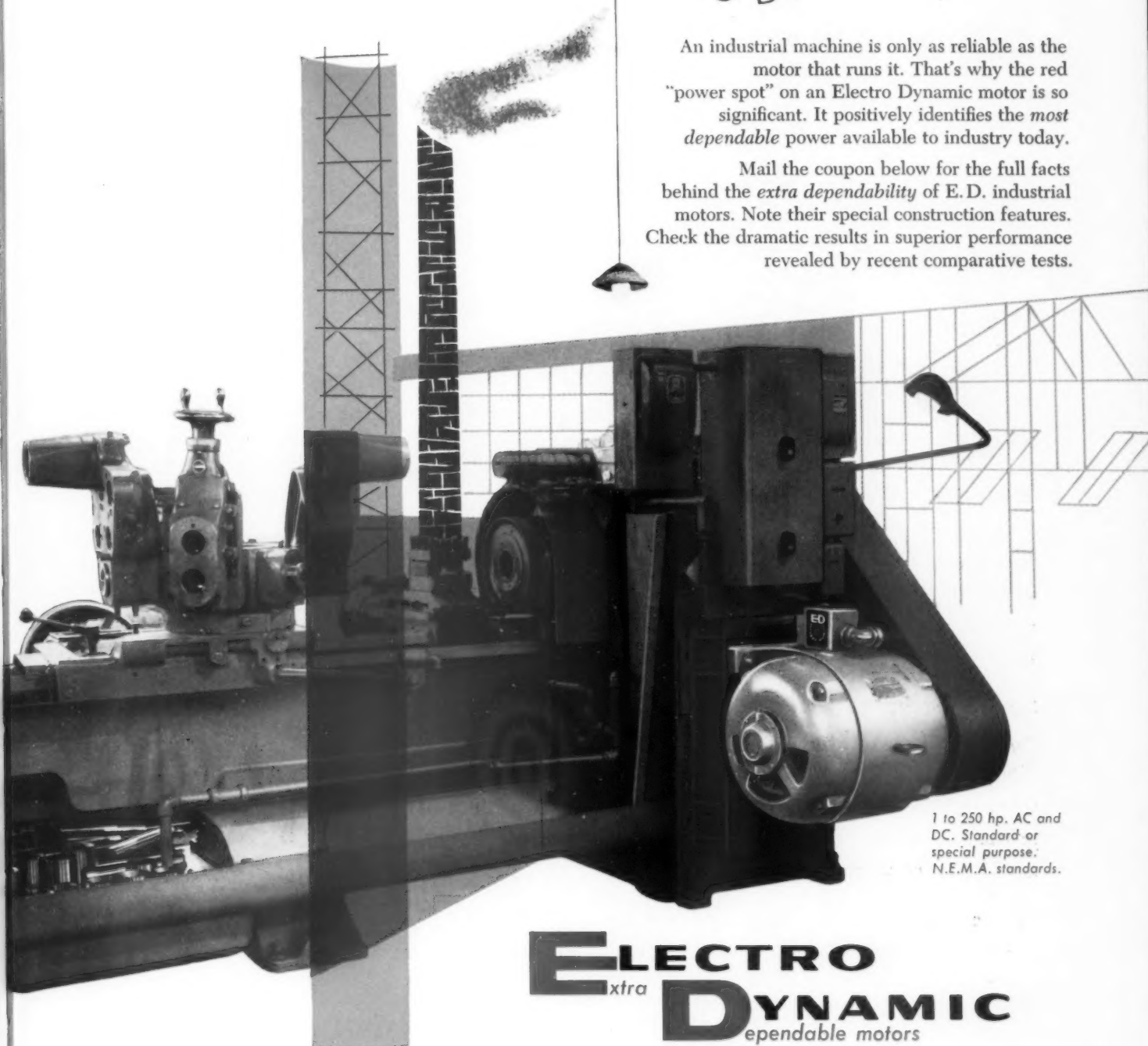
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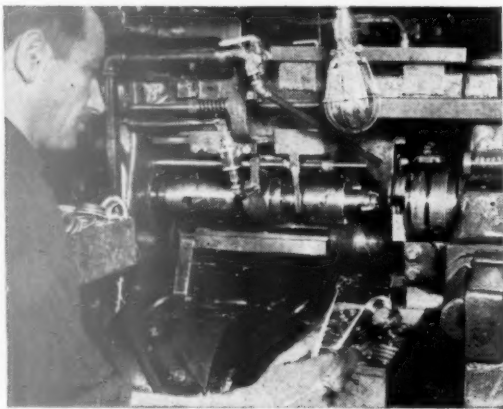
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NEW! 96-page pocket size booklet, "How To Machine Republic ENDURO Stainless Steel Bars." Packed with machining tips, tables of feeds and speeds, stainless steel properties, other vital information. Write Republic. Ask for ADV-607. FREE!

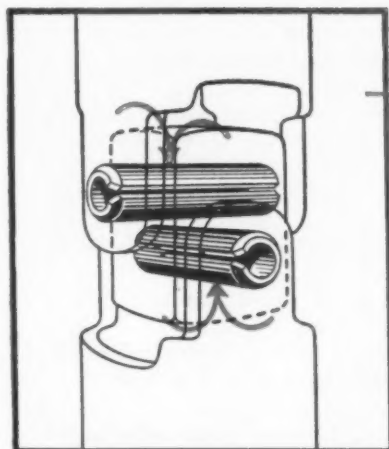
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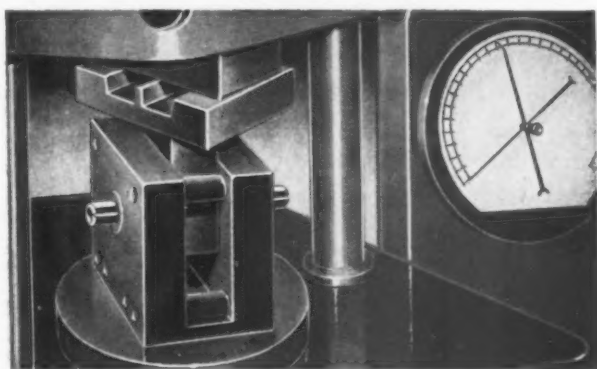


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Normal leverage puts the load on the pins at these points. Pins must have a high resistance to shearing — and every pin must stand up to plenty of abuse. Many manufacturers' tests have proved Rollpin's uniformly high shear strength.



We urge you to test spring pins before you buy — for uniformity of diameter and length, hardness, insertion and removal forces, and recovery of diameter, as well as shear strength.



consistent strength...as important in the pin as in the socket

The Moore Drop Forging Company, who manufactures the famous Craftsman wrenches for Sears Roebuck and Co., used stainless steel rivets to fasten the universal joint on their Flex sockets. Thorough testing, under all possible load conditions and drive angles, convinced them that Rollpin was stronger than the stainless steel rivet previously used. This led to a redesign of the joint with Rollpins replacing the rivets. Also, the spring tension inherent in the Rollpin locking principle was used to provide the "drag" that holds the socket head in angular position. The result . . . an improved product at lower cost.

Dependability like this is based on the rigid ESNA® quality controls that insure consistent strength and mean reliable performance by every Rollpin.

Moore Drop Forging Company was able to save assembly time, too. Rollpin is simply driven into holes drilled to normal production tolerances. It compresses as driven, locking itself in place by exerting pressure on the hole walls. In this case, the extra operation of spinning on a rivet head was eliminated.



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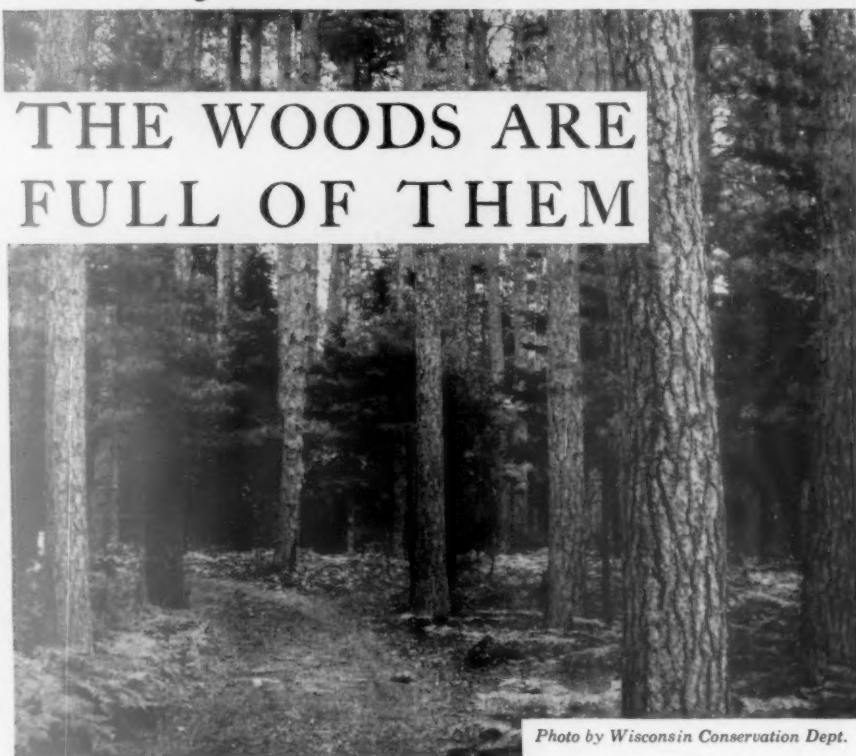


Photo by Wisconsin Conservation Dept.

But to gain a competitive edge for your electrical product, it calls for more than just any source of electrical insulation. What's needed is a source that can fill your everyday needs and which can also fit the properties of the correct electrical insulation to a specific set of fresh requirements. Such assistance from IMC can mean the more value-per-dollar advantage for your product that beats your competition.

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(Continued from page 236)

convention. It was attended by 51 Alcoa purchasing men from the company's plants throughout the country. Many of them stayed on to attend the National Association meetings.

The concentrated sessions on Saturday morning and afternoon and Sunday morning consisted of a series of practical discussions on pertinent purchasing topics, keyed to the specific conditions, policies, and problems of Alcoa buying. For each topic a moderator, speaker, and secretary had been assigned in advance. The topics included:

- Reciprocity
- Gifts and Entertainment
- Purchasing Research
- Relations with Other Departments
- Centralized-Decentralized Buying
- Lines of Communication
- Buying Proper Quantity
- Traveling Requisitions
- Explanation of Alcoa's Inventory Control Policy
- Contract Procedure
- Selecting Suppliers
- Suggested Better Method of Reproducing Purchase Orders
- Procedure Critique
- Plant Use of Pittsburgh Inquiry Forms
- Scheduled and Contractual Buying
- Steel Survey
- Expediting between Plants and Pittsburgh
- Competitive Buying under Alcoa's Purchasing Policy
- Training Departmental Personnel
- The Broad Viewpoint

General Purchasing Agent R. O. Keefer opened the conference and summed up the program in his closing remarks. An inspection visit to the company's Chicago Works was also scheduled.

Lead Screw Tapping Head Fits Any Drill Press

Unskilled help can now produce precision threads on any drill press, according to Automatic Methods, Inc., 965 W. Grand St., Elizabeth, N. J. A new tapping head is responsible. It features a rapidly interchangeable lead screw, a new type cone clutch reversing mechanism and positive depth control to assure perfect threads even in blind or recessed holes. Higher production is possible because the tap withdraws faster and the floating work piece is positioned rapidly. The lead screw prevents thread misalignment by the operator's downward or upward pressure.

IMPROVED No. 90A Series WILLSON MonoGoggle

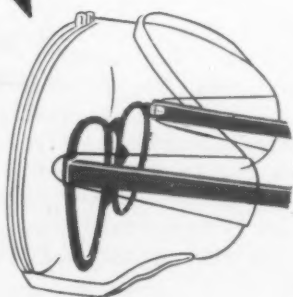


Wider, Deeper Frame Gives Greater Clearance Over Spectacles

We've taken the popular Willson MonoGoggle® design and made it with a deeper and wider pliable, transparent *vinyl* frame with grooves molded into the sides for extra roominess over glasses. It provides protection against light impact hazards on such operations as spot welding, buffing, wood working and chemical handling.

Workers who wear prescription glasses—even the new, big plastic frames—will welcome its extra roominess. Transparent frame is tinted light green to keep out glare, but admits adequate side light. Clear or green plastic lenses are securely held in place by a deep channel and closed "tab pocket".

Ask your Willson distributor to show you the new No. 90A Series MonoGoggles, available with either direct or indirect ventilated frames or non-ventilated styles. Or write for bulletin.



Side view shows molded-in grooves in sides of frame provide ample clearance for spectacle temples—removes interference with eye glass comfort.

More than 300 Safety Products



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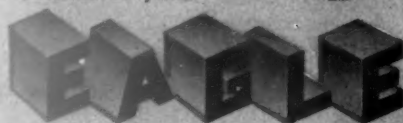
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or full stream



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best for 60 years



MANUFACTURING COMPANY
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60 YEARS OF SERVING THE TRADE

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Purchasing Conferences at University of Wisconsin

The Industrial Management Institute, University of Wisconsin, is again offering a series of one-day conferences for purchasing managers in conjunction with the Wisconsin Manufacturers Association and the Purchasing Agents Association of Milwaukee. Meetings are held on Tuesdays, from 9 to 4, at the Memorial Union Building on the campus at Madison. Enrollment is open at a fee of \$15 per session or \$75 for the complete series. This year's program is as follows.

Sept. 28, 1954—"Responsibility, Authority, and Delegation; Purchasing Management Challenges." *Conference Leader:* Alvin Brown, Vice President, Johns-Manville Corp., New York.

How to analyze your present organization.

Determining organization needs.

How to effect the transition between the present and desired organization.

When and how to delegate work, responsibility, and authority.

Oct. 26, 1954—"Purchasing's Use of Inventory Control." *Conference Leader:* Herbert L. Brown, General Manager, Jeffries Transformer Co., Los Angeles.

Factors bearing on inventory control.

Where does purchasing fit into the inventory picture?

Problems involved.

Nov. 23, 1954—"Purchasing Reports to Management." *Conference Leader:* Howard T. Lewis, Professor of Marketing, Harvard Graduate School of Business Administration, Boston.

Why should purchasing report to top management?

In what forms should these reports be?

How often should you report?

How effective are the reports?

Feb. 22, 1955—"Growth of Purchasing through Value Analysis." *Conference Leaders:* Dean Foote, Works Purchasing Agent; Roy Johnson, Supplies Liaison Engineer; Donald Cheeseman, Assistant Superintendent, Time Study and Planning; Allis-Chalmers Mfg. Co., West Allis, Wis.

What is value analysis?

What are the techniques?

Organization for value analysis.

What are some of the problems involved and how can they be solved?

March 22, 1955—"Sales and Purchasing Relationships." *Moderator:* William Grede, President, Grede Foundries. *Panel Members:* (for Purchasing) Harold Jungbluth, Oilgear Co.; Burbank Murray, Trackson Co.; Roy Anderson, Harnischfeger Corp.; (for Sales) Elmer Kapke, Socony-Vacuum Oil Co.; Jack Henry, Ampco Metal, Inc.; Roy Hanson, Milprint, Inc.

How can these activities be of greater aid to each other?

What are some of the problems involved between the two activities?

How can better understanding and cooperation be achieved?

April 26, 1955—"Factors in Management Success and Failure." *Conference Leader:* Dr. Kenneth Vaughn, Psychologist, Rohrer, Hibler & Replogle, Milwaukee.

What makes a good manager?

The personal inventory.

How are the factors of management success or failure measured?

Using the analysis of the factors for managerial self-development.

Pressurizing Hikes Blast Furnace Output 15%

Further recognition of a new process for increasing pig iron production from blast furnaces was made recently. The United States Steel Corporation signed a license agreement with Arthur D. Little Inc. of Cambridge, Mass. for use of the new process. By increasing the pressure of the top part of the furnace, blast furnace production can be increased by as much as 15%.

The process was first tried experimentally during World War II by cooperation between the War Metallurgy Committee and the Republic Steel Corporation. In 1953, an all-time company record of pig iron production was set with one of Republic's pressurized furnaces. This production of 574,028 tons is believed to be the all-time record for

an American furnace using domestic ore without adding scrap iron or steel to the charge.

Today there are nine licensed pressurized furnaces in operation in the United States. Licenses have also been granted to British and European companies. It is known that Russia is using the process without license. There are believed to be 11 pressurized blast furnaces in operation behind the Iron Curtain.

The pressure operation is accomplished by throttling the gases from the furnace. Reducing gas is thus slowed down and pressure built up in the furnace. In addition to increased output, consumption of coke is cut and flue dust losses are reduced by more than a third. Cost of installation is about 2% of original furnace cost.

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SANDVIK ROLLS STRIP CLOSER TO EXACT SIZE . . . GIVES YOU MORE FEET AND MORE PARTS PER POUND

Sandvik precision-rolling not only produces strip within specified tolerances, but consistently brings gauge closer to the exact size. That means more parts for your spring steel dollar.

Sandvik's consistent uniform physical properties, coil after coil, lot to lot assure continuous, high quality production at a lower cost per part.

Sandvik Swedish specialty cold-rolled, high carbon strip steel is available:

- Precision-rolled in thicknesses from .001"
- In straight carbon and alloy grades
- In special analyses for specific applications
- In more than 800 stock sizes
- Annealed, unannealed or hardened and tempered
- Polished bright, yellow or blue
- With square, round or dressed edges

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If you buy or specify spring steel you should have this catalog. It gives thickness, width, hardness, types of edges, and weight in pounds per hundred feet. Also useful conversion tables. Write for your free copy.

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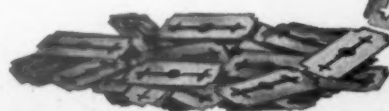
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55-79

OCTOBER, 1954

For More Information Circle No. 273 on Inquiry Card—Page 17

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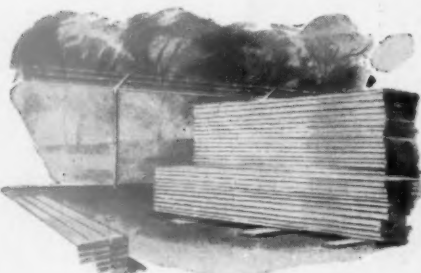
4 ways your **ANCHOR FENCE** improves plant operation



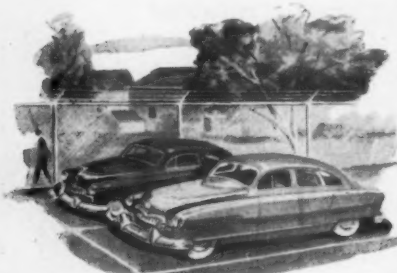
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Controls traffic, permits activity checks



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THOUSANDS of companies and the men in charge insist on Anchor Fence, because it does such a multitude of jobs . . . solves so many problems.

And the benefits an Anchor Fence provides are permanent. An Anchor Fence stays *in place*, stays *erect* year in, year out regardless of soil or weather conditions. Deep-rooted "Drive Anchors," square terminal posts and H-Beam line posts, all combine to give you maximum protection . . . attractive appearance. So insist on the genuine Anchor Chain Link Fence . . . the fence with the zinc coating applied after weaving — not before.

Remember, though, there is only one *genuine* Anchor Fence. Always look for the familiar orange and black nameplate. It's your guarantee of satisfaction. *Specify* Anchor Fence when you buy.

Meanwhile, send for additional information. Write to: ANCHOR POST PRODUCTS, INC., *Industrial Fence Division*, 6615 Eastern Ave., Baltimore 24, Maryland.

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Division of ANCHOR POST PRODUCTS, Inc.

Plants in: Baltimore, Md.; Houston, Texas; and Los Angeles, Calif.
Branches and warehouses in all principal cities.

For More Information Circle No. 274 on Inquiry Card—Page 17

Radio-Telephone Sets Speed Material Handling at Chrysler

Shortwave radio-telephone sets installed in electric trucks have saved time and ended many empty hauls in materials handling operations at Chrysler Corporation's Indianapolis plant.



Shortwave sets have increased materials handling efficiency by 30%

A dispatcher, operating from a centrally located office, transmits material handling assignments to truck drivers over the two-way radio-telephones. Without moving from his truck, a driver answers the 'phone and receives instructions. He is told what type of stock is needed on the line, where he can pick it up and where to drop it off. Within minutes after receiving the assignment, he delivers the material to any designated production station within the 20-acre plant.

The system is said to have already increased material handling efficiency about 30%. The units were installed on plant trucks by Indiana Bell Telephone Company.

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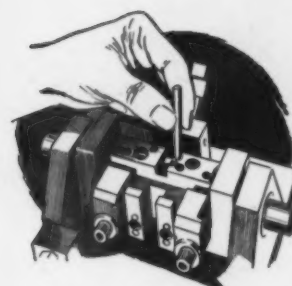
Information on Carbon Brushes Offered in New Monograph

A monograph entitled "Carbon Brushes for Electrical Machines, Their History, Properties and Application", is available from the National Electrical Manufacturers Association, 155 E. 44th St., New York 17, N.Y. Published by the Carbon Section of NEMA, the book sells for \$1.00 per copy.

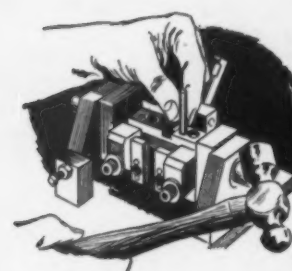
The monograph stresses the importance of carbon brushes in our daily lives, their application, the types of carbon brush materials, properties and operating characteristics, the selection of brush grades, the problems of commutation and the care of brushes, and suggestions for eliminating trouble.



UNBRAKO Precision-Ground Dowel Pins are widely used for aligning parts, as in dies, jigs and fixtures. This radius grinding fixture, for putting a flat on electronic shafting, is a good example of such an application.



Assembler inserts formed end of UNBRAKO dowel pin into hole preparatory to tapping it into position.



Formed ends, with continuous grain flow, won't chip. Uniform heat treatment permits UNBRAKO dowel pins to be driven in and out of holes without upsetting.



UNBRAKO dowel pins—made of heat treated alloy steel—have a surface hardness of 60-62 Rockwell "C" Scale; a surface finish of 6 microinch maximum; a core hardness of 50-54 Rockwell "C" Scale; an average single shear strength of 150,000 psi; and a diameter tolerance of ± 0.0001 ". They are available in two standard sizes in diameters from $\frac{1}{8}$ " to 1".

Keep your inventory at a minimum

Use UNBRAKO Standards—stocked by your distributor

Because your UNBRAKO distributor stocks a full line of standard UNBRAKO socket screw products, your inventory is lowered. This ready supply not only cuts your investment, but gives you faster delivery and reduces your buying costs. For a complete listing of standard UNBRAKO products, see your distributor or write STANDARD PRESSED STEEL CO., Jenkintown 31, Penna.



SOCKET SCREW DIVISION



JENKINTOWN PENNSYLVANIA





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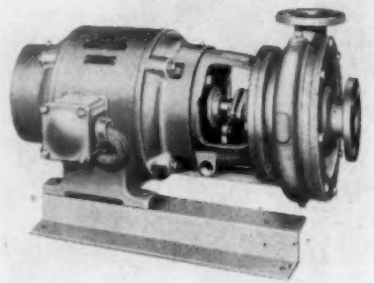
For More Information Circle No. 276 on Inquiry Card—Page 17

Insulating Material Withstands Temperatures to 150 C

A class B high-temperature electrical insulating material, "bi-Glas," will withstand "hot spot" operating temperatures up to 150 C. The material is supplied in full-width form for use as layer insulation and phase insulation. Also available in tape form, it provides uniform, tight, and smooth lapping over irregular surfaces. Even after severe elongation, it provides excellent electrical properties, high abrasion resistance and protection against the fraying of the glass fibers. Bi-glas is made by the Electro-Technical Products Div., Sun Chemical Corp., Long Island City, N. Y., out of special bias-woven fibreglas cloth treated with a high temperature varnish.

♦ ♦ ♦

Centrifugal Pump Designed for Corrosive Fluids



A new series of production-built centrifugal pumps adaptable to almost any special customer requirement is announced by Ampco Metal, Inc., Milwaukee, Wis. These 1750 rpm single-suction pumps are available in sizes ranging from fractional flow to 600 gpm. To reduce corrosion and erosion, they are available from stock constructed entirely of Ampco alloys or nickel chrome alloys.

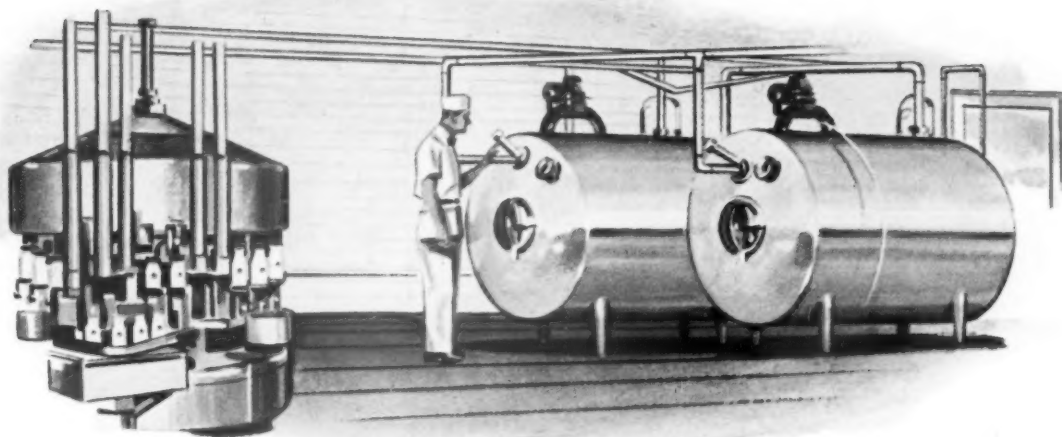
A unique feature of the new line is the ease and rapidity with which pump components can be interchanged to fit the requirements of specialized jobs. Thus the customer can get a pump that is tailor-made for his job without the expense of a special unit. In addition, the design permits field changes at low cost.

An important feature of the new line is multi-seal protection of bearings. The problem of overgreasing is eliminated since used and surplus grease is carried away from the bearing when fresh lubricant is supplied. If the customer desires, he can get permanent sealed double

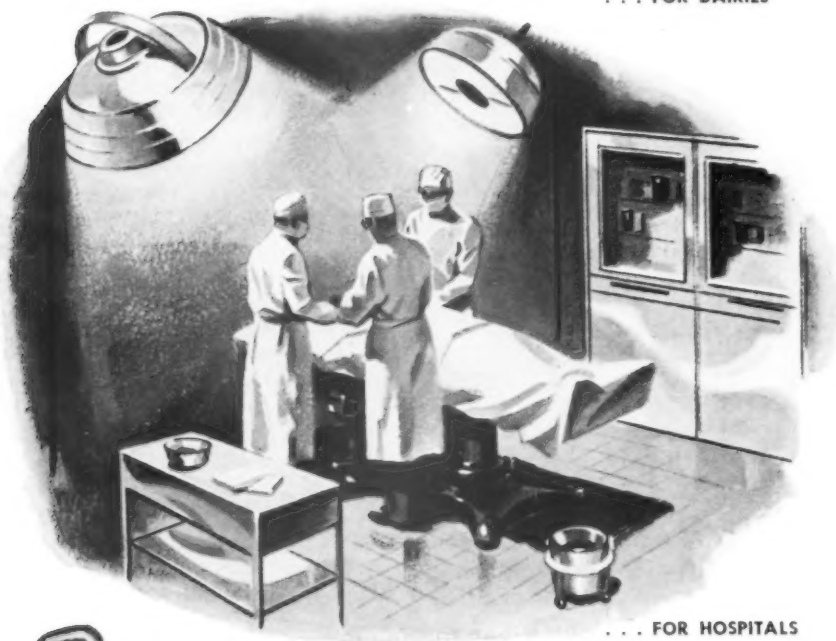
(Please turn to page 248)

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on Inquiry Card—Page 17→

PURCHASING



... FOR DAIRIES



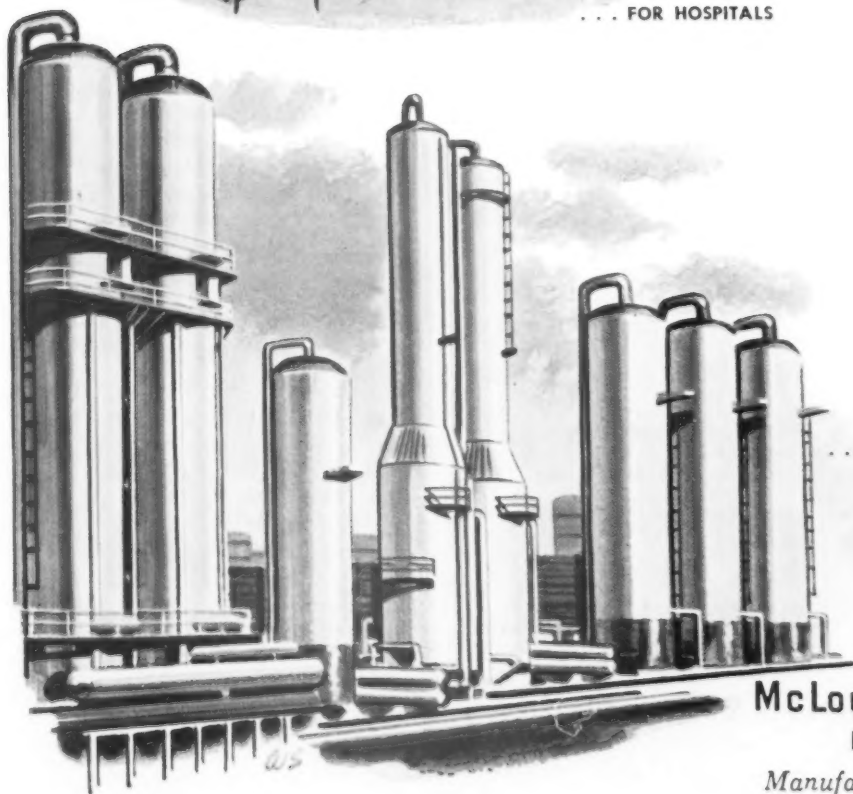
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McLouth

STAINLESS

Steel

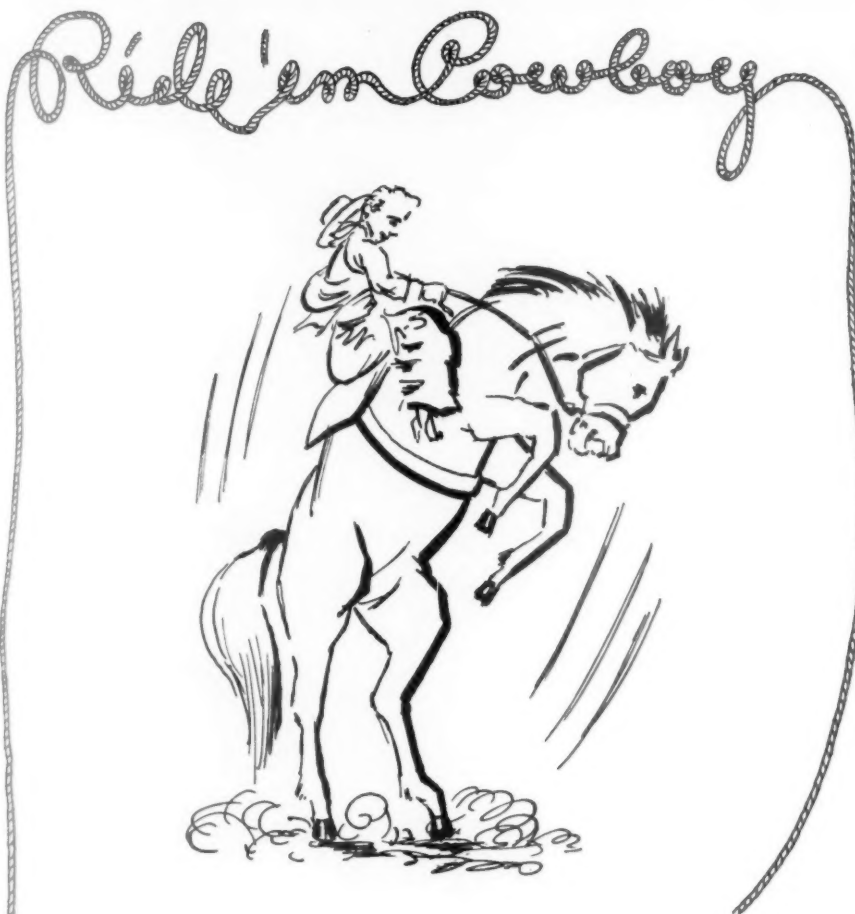
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and strip steel . . . for the product
you make today and the
product you plan for tomorrow.



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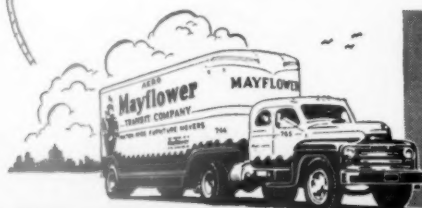


► It takes a trained rider to stay astride a bucking bronco . . . and it takes a trained, experienced van operator to move your furniture safely from one city to another. Mayflower van operators are selected on the basis of scientific aptitude tests. They are thoroughly trained in Mayflower's own moving school . . . and, they drive the best equipment that money can buy. For a move that's easy for you and safe for the furniture, use Mayflower Moving Service.



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NATION-WIDE FURNITURE MOVERS

For More Information Circle No. 278 on Inquiry Card—Page 17

(Continued from page 246)
width bearings or oil lubricated types.

Anticipated applications of the new line of pumps include acetone, brine, citric acid, vinegar, formaldehyde, sulfate mine water, phosphoric acid, sulfuric acid, toluene, vegetable oils, pickling liquors, and beer. The company believes additional applications will be developed wherever corrosive and erosive problems are encountered.

1 1 1

Steel Exports Decline; Western Nations Take Half

Exports of finished steel products last year totaled 3.1 million tons—26 per cent less than in 1952, although production of hot rolled iron and steel products was 20.5 per cent greater, American Iron and Steel Institute, announced recently.

Six products comprised more than half of total steel exports last year, according to Department of Commerce figures. Reported in approximate figures they were (1) tin plate, 438,000 tons; (2) structural shapes, 308,000 tons; (3) seamless pipe and tubing, 288,000 tons; (4) welded pipe and tubing, 277,000 tons; (5) plates, 274,000 tons, and (6) hot rolled sheets, 230,000 tons.

More than half of the total steel exports went to five nations, all of them in the Western Hemisphere. They were Canada, Mexico, Venezuela, Colombia and Brazil—in the order of tonnage received. More than 1.1 million tons was exported to Canada, 247,000 tons went to Mexico, 200,000 to Venezuela, 115,000 to Colombia and 95,000 to Brazil. Canada was also the largest recipient of the top six ranking steel export products mentioned above except tin plate.

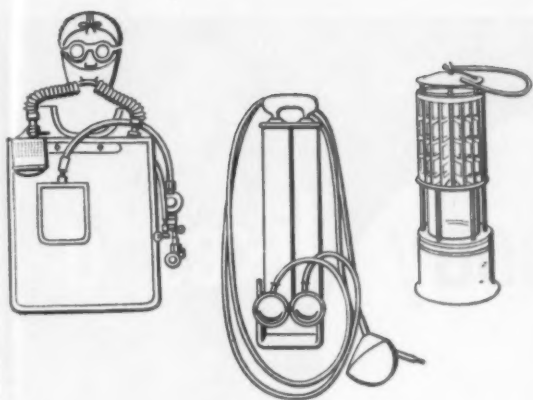
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Vinyl Coating Maintains Masonry

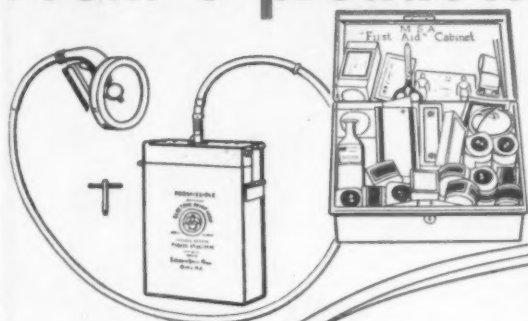
A Bakelite vinyl resin-base coating can be applied by brush, spray or roller on masonry surfaces to make them more durable, decorative and economical to maintain. Drying in about half an hour, the coating forms a tough, smooth and resilient skin that adheres tightly to masonry or steel surfaces. It withstands weathering and abrasion, and resists moisture, chipping and peeling. It is produced by Vimasco Corp., Box 4063, Station A, Charleston, W. Va.

For More Information Circle No. 279
on Inquiry Card—Page 17→

PURCHASING



From 5 products



to more than 3600 ...



A 40 Year Record of SERVICE TO SAFETY

Keeping pace with safety needs has been our job here at M.S.A. since our beginning on June 14th, 1914. During these years, hundreds of new hazards have been introduced by new industrial processes and projects. Many of these problems were anticipated by us . . . many were relayed to us. The more than 3600 items now in our product line provide ample testimony to the fact that our extensive re-

search and manufacturing facilities were successful in finding the right answers.

Our finest reward for these 40 years of safety service comes from the knowledge that today thousands of men, who otherwise could be seriously injured, are well because M.S.A. products have turned accidents into incidents. This knowledge is a spur to continuing achievement.



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TRADEMARK OF DEPENDABILITY

Welding Spec Standardized

For the first time, filler metal for inert-gas metal-arc welding aluminum has been standardized by the new specifications, issued jointly by the AWS and the ASTM (AWS Designation A5.10; ASTM Designation B285). These specifications include aluminum and aluminum-alloy welding rods and bare electrodes. The rods are for use with the gas, carbon-arc, atomic-hydrogen and inert-gas metal-arc (non-consumable electrode) welding processes. The bar electrodes are used with the inert-gas metal-arc (consumable electrode) welding process.

Twenty-two classifications of filler metal are established by these specifications. This includes all the commonly used aluminum and aluminum-alloy filler metals.

A table gives the chemical analysis of the different classifications. Standard sizes and lengths, packaging requirements and standard tests for verifying conformity of a given filler metal to the standard requirements are also provided.

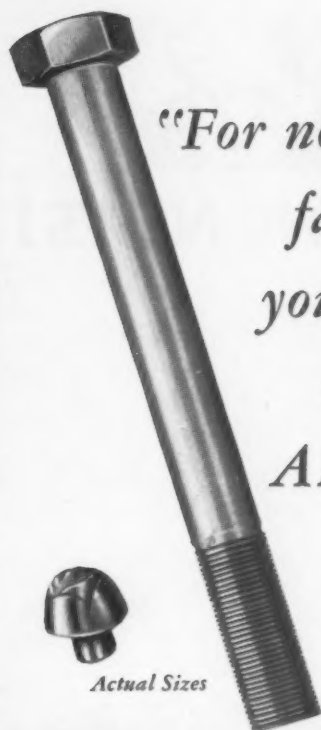
An Appendix is included as an aid to users in selecting the most suitable filler metal for their needs. It contains information on the use of each classification for joining different base metals with the different welding processes.

Copies of the Specifications can be obtained at 25 cents each from the American Welding Society, 33 West 39th Street, New York 18, N. Y., or the American Society for Testing Materials, 1916 Race Street, Philadelphia 3, Pa.

1 1 1

"In-Between" Materials Handling Container

Stephenson Industries Inc., 548 E. Fort St., Detroit 26, Mich., announces "Tote-Tub," a materials handling container that is said to fill the gap between the shop pan and the skid box. There are four models with 2, 4, 6, and 8 cu. ft. capacity respectively. They are said to offer a cost saving of 37% per cu. ft. of capacity compared with shop pans. They are designed for stacking and can be handled when loaded with either a lift truck or overhead hoist. Empties can be easily handled by one man. Capacities range from 750 lb. to 1,500 lb. They are said to be ideal for handling and storage of bulk materials, small stampings and screw machine parts of all sizes that the 21" diam. opening will accommodate.



Actual Sizes

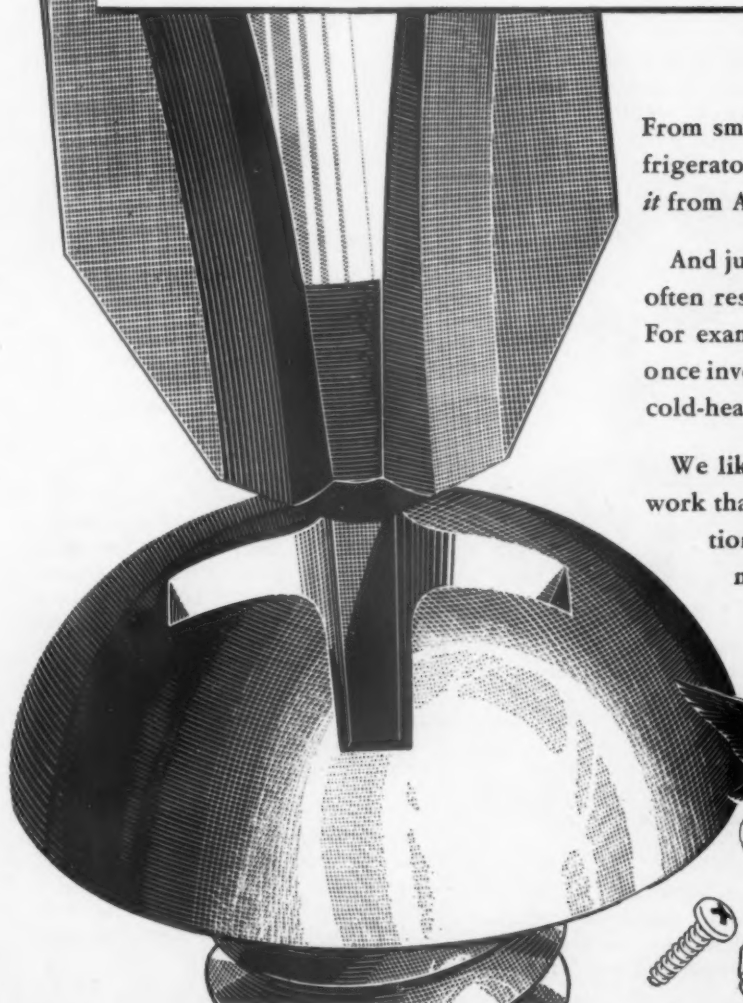
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fasteners—
your best bet
is to call
AMERICAN"*



From small, stainless, decorative rosettes to aluminum refrigerator bolts, you can get *what you need when you need it* from American.

And just as important, you'll find that a call to American often results in getting lower cost fasteners for your job. For example, the aluminum refrigerator bolt shown here once involved expensive cutting operations. Now American cold-heads it, at a big saving to the customer.

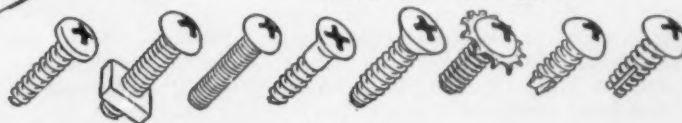
We like to work that way with customers. We'd like to work that way with *you*. Send us your prints and a description of the fasteners you now use. We will work to make them do a better job for you, at less cost wherever possible. Just write to:



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Personalities



IN THE NEWS

The new General Purchasing Agent of Thomas A. Edison, Inc., West Orange, N. J., is **Valentine M. Meade**. Mr.



V. M. Meade

Meade joined the Edison organization in 1911 as an office boy for one of the company's affiliates, the Edison Portland Cement Co. He was subsequently transferred to the West Orange headquarters and made assistant general purchasing agent in 1944.

William H. French has been appointed Director of Purchases for Trailmobile, Inc., Cincinnati. Mr. French, who joined Trailmobile in 1950, had previously been associated with the Cambridge Tile Manufacturing Company and Darling and Co. He moves to his new post from purchasing agent of Trailmobile's Cincinnati plant.

Calumet & Hecla, Inc., Chicago, has named **A. L. Woods** as Assistant to the Vice President of Metal Sales and Procurement. Mr. Wood's new assignment is in addition to his responsibilities as director of purchases of the firm's Wolverine Tube Division, with which he has been associated since 1933.

The Organic Chemicals Division of American Cyanamid Co., New York, has named **Edgar W. Heller, Jr.**, as Purchasing Agent in charge of the raw material and container section of its purchasing department in the Bound Brook, N. J., plant. Mr. Heller has been with Cyanamid for 27 years, joining the company at its Heller and Merz plant in Newark. In 1930 he was transferred to Bound Brook. He was made assistant to the purchasing agent in 1946.

Canada Dry Ginger Ale, Inc., New York, has named **J. Bruce Neil** as Purchasing Agent. Mr. Neil was formerly



J. B. Neil

assistant purchasing agent. Mr. Neil joined Canada Dry in 1942 as credit manager and later became office manager for the New York division. He also held the post of assistant to the controller prior to his appointment, in 1946, as assistant purchasing agent.

Jacob L. Sharp, comptroller of the University of Arkansas, has been made State Purchasing Agent by Governor Cherry.

According to an announcement made by the Louis Allis Co., Milwaukee, the newly created post of Director of Pur-



H. M. Larsen

chases and Production Planning has been filled by **Hans M. Larsen**. Mr. Larsen has been with the company for the past 25 years in various capacities.

George W. Benbury has been promoted to the position of Assistant General Purchasing Agent of the Pennsylvania Salt Mfg Co., Philadelphia. He will direct the activities of the Construction Equipment and Containers sections of the Central Purchasing Office in Philadelphia. Mr. Benbury joined Pennsalt Chemicals in 1933 and has held the posts of technical service engineer, manager of the Packaging and Labeling Department, and since 1952, purchasing agent.

Roy D. Gingery has been named Purchasing Agent for Telling Ice Cream Co. and Belle Vernon Milk Co., Cleveland. He has been head of the Sealtest Quality Control Department for the past four years.

(Please turn to page 256)

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PAPER to package



**STEEL
STRAPPING**



... or

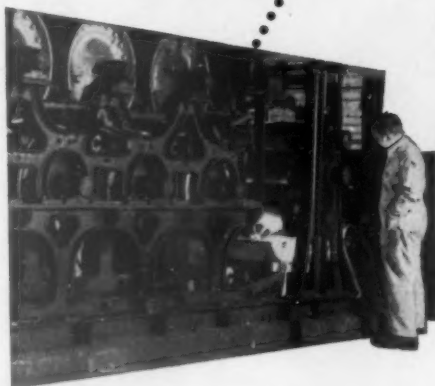
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SPRINGS**

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of 600 Tailor-Made
Riegel Papers

Riegel can make a tough duplex paper for wrapping heavy coils of steel strapping . . . or produce a moisture-proof, anti-tarnish, glassine-polyethylene laminate for packaging small parts like delicate hair springs. It is another example of the remarkable range of facilities we can put to work for you whenever you have a paper problem. Just tell us what the paper must do for you. Write now to Riegel Paper Corporation, P.O. Box 250, New York 16, N. Y.

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in paper at
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RAINY DAY**

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**P. A. needs
Solder**



**I've got to
have Babbitt**



**I'll need
some Brass**



**We'll want
Anodes and
Lead**



**Requirement:
Aluminum and
Magnesium**



**Requirement:
Die Casting
Metal**

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Die Casting Metals, Lead and Lead Products, Solders, Type Metals



The appointment of **Joseph Megliola** as Purchasing Supervisor of Tecnifax Corp., Holyoke, Mass., has been announced. He was previously employed in the production and purchasing departments of the Van Norman Co., Springfield, Mass.

Montgomery Ward & Co., Chicago, has appointed **F. R. Bowen** as General Purchasing Agent.

Emery V. Squires has been made Director of Purchases for Richfield Oil Corp., Los Angeles. Mr. Squires has been active in purchasing operations for the past 30 years. In 1937 he was assigned as a buyer in the Los Angeles area and named assistant director of purchases in 1949. He is a member of the Los Angeles Association of Purchasing Agents.

Hubert P. Waldron, a GE veteran of 18 years service, has been appointed Purchasing Agent for GE's Capacitor Department in Hudson Falls, N. Y.

Dennis E. Newton is now Purchasing Agent of Carbide and Carbon Chemicals Co., New York. He formerly was associated with Ford, Bacon and Davis.

♦ ♦ ♦

Traveling Clinics on Material Handling

The fourth and fifth in the series of "traveling clinics" on material handling problems scheduled by The Material Handling Institute will convene October 5th in Boston and on October 6th in Syracuse, at the request of and in cooperation with the local chapters of the American Material Handling Society.

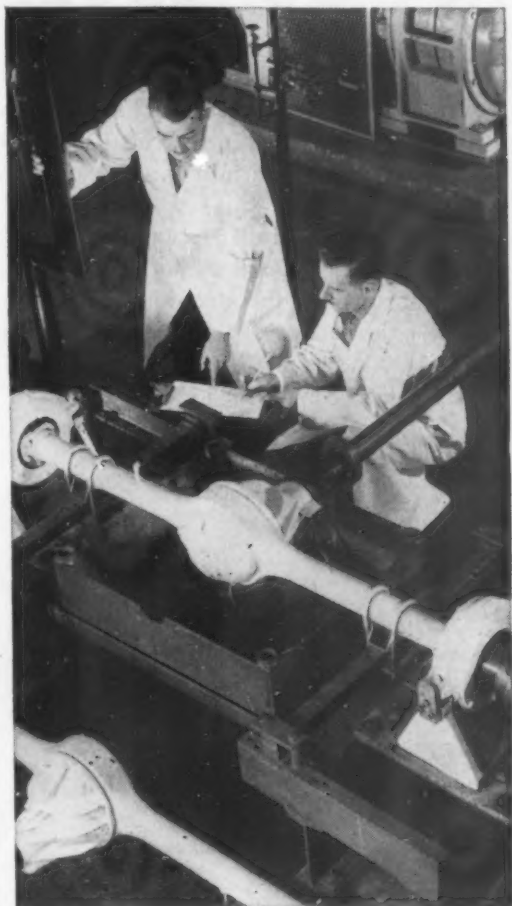
The Boston clinic will meet at the Hotel Sheraton-Plaza and the Syracuse clinic at the Hotel Syracuse. As in the case of the first two clinics held in New York and Boston, The Material Handling Institute will furnish five panels consisting of five specialists each selected from the headquarter's staffs of the member companies of MHI. The panels will consider material handling problems in five principal categories:

1. Receiving and shipping
2. Handling in old and multi-story buildings
3. Storage, warehousing and yard-handling
4. How to select an industrial truck—purchase or lease?
5. How to get started in material handling.

USE INQUIRY CARD
PAGE 17



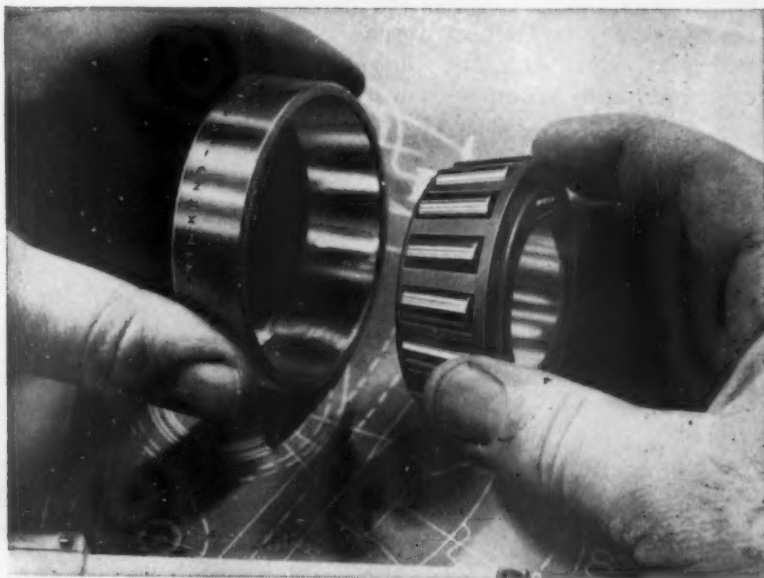
YOU CAN COUNT ON HM89410 on this bearing cup, along with HM89446 on the cone, to tell you the size and type of this tapered roller bearing. But a top P.A. knows he can count on getting extra quality and service when the trademark "Timken®" is stamped beside the number.



YOU CAN COUNT ON RESEARCH on both bearings AND related parts. For instance, recent studies made with the equipment above enabled us to recommend a design change that improved the lubrication of automotive axle bearings and also made the axle stiffer and less costly to produce.



YOU CAN COUNT ON BEARINGS made of the finest steel available. To insure this, we make our own—the only bearing manufacturer in the U. S. that does. Here a billet is stamped to identify the heat and ingot it came from. It's just one of many ways we insure close quality control.



YOU CAN COUNT ON THE QUALITY and service you get with every Timken bearing. Quality and service make Timken bearings your number-one value. And their public acceptance adds an important sales feature to Timken bearing-equipped products. So when you specify a bearing number, always specify "Timken". The Timken Roller Bearing Company, Canton 6, Ohio. Canadian plant: St. Thomas, Ontario. Cable address: "TIMROSCO".

Quality, service and public acceptance make TIMKEN number 1 for VALUE

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NOT JUST A BALL ○ NOT JUST A ROLLER □ THE TIMKEN TAPERED ROLLER □ BEARING TAKES RADIAL AND THRUST → AND ← LOADS OR ANY COMBINATION



THE FLIGHT THAT MADE

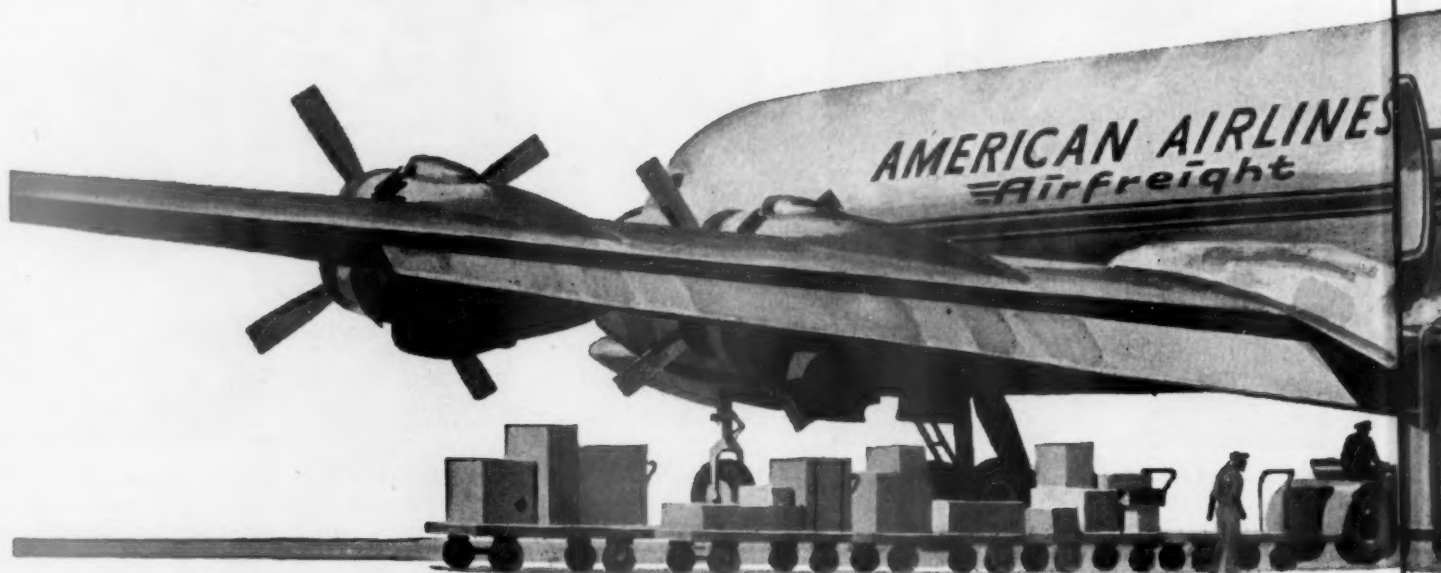
10 YEARS AGO, AMERICAN AIRLINES IN THE WORLD'S FIRST SCHEDULED A

On October 15th, 1944, businessmen found a new way to send their wares to market when an American Airlines DC-3 flew the first flight of the first scheduled airfreight service. Though the event could not compete with the war headlines of the day, it did make news—and good news—to those seeking better methods of distribution.

In the first full year of operation alone, American Airlines delivered more than 2,500,000 pounds of cargo consisting mainly of fish, flowers and pharmaceuticals. Succeeding years saw impressive gains in both volume and variety as well as American's introduction of the first all cargo aircraft to be employed in scheduled freight opera-

tions. Today—with ponderous as well as perishable products moving daily by air, the amount of freight carried by American in 1954 is expected to exceed 100,000,000 pounds—again establishing American as the leading carrier of Air Cargo.

With service to leading industrial centers throughout the United States, American Airlines Airfreight is an industry-wide offering whose full potential can only be measured by the imaginations of those who explore and employ its services. American Airlines, Cargo Sales Division, 100 Park Avenue, New York 17, New York.



AMERICAN AIRLINES INC.
America's Leading Airline



October 15th, 1944 — An American DC-3 makes the FIRST scheduled cargo flight.

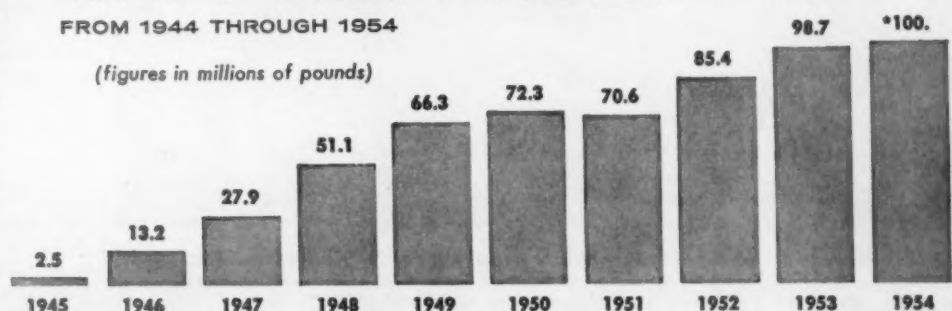
E HISTORY—but not the Front Pages!

S INAUGURATED D AIRFREIGHT SERVICE



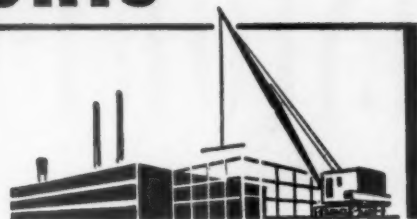
VOLUME OF CARGO CARRIED BY AMERICAN AIRLINES AIRFREIGHT
FROM 1944 THROUGH 1954

(figures in millions of pounds)



*estimate

INDUSTRIAL Developments



The forthcoming purchase of the assets and business of the Sponge Rubber Products Co., Shelton and Derby, Conn., has been announced by **B. F. Goodrich Co., Akron**. It will be operated as the Sponge Products Division.

General Box Co., Des Plaines, Ill., has completed the construction of an \$800,000 corrugated box factory at Louisville, Ky. The plant, capable of supplying 30,000,000 sq. ft. of corrugated board per month, will replace and expand the General Box facilities which were destroyed by fire a year ago. The building, containing 113,000 sq. ft. of floor space, is built in the shape of a modified "T" to permit easy expansion in any of three directions.

A new, patented process for injection molding of unplasticized polyvinyl chloride will be used by a company just organized, **Tube Turns Plastics, Inc., Louisville, Ky.**, in the manufacture of industrial plastic pipe fittings and custom molded products. The company, capitalized at \$1,500,000, will serve the oil, paper, chemical, food and allied divisions. Tube Turns Plastics was established, jointly, by Tube Turns Division of National Cylinder Gas Co. and Jackson & Church Co.

The administrative merger of the Fibre Specialty and Phenolite divisions has been announced by **National Vulcanized Fibre Co., Wilmington, Del.** Located in adjacent areas at Kennett

Square, Penna., the two have been combined as the Kennett plant.

A \$1,250,000 addition for the manufacture of shell molded castings is scheduled for completion by the end of the month at **Lynchburg Foundry Co., Lynchburg, Va.** Fourteen shell molding stations and complete core facilities with capacity for producing more than 100 tons of castings per day, are included in the new setup.

The completion of a reversing hot strip mill has been announced by **Newport Steel Corp., Newport, Ky.** Another new mill, part of the \$9,000,000 expansion and modernization program, is now under construction for cold rolling steel. It is expected to be in operation by early 1955.

A modern, new boiler house has been erected at the Haverhill, Mass., Boxboards Division plant of **Robert Gair Co., Inc., New York**. The new steam and power installation, which cost \$1,200,000, makes the plant wholly self-supplying. It is 83 ft. long, 60 ft. wide and 90 ft. high above the basement floor. The water softener and de-aerator, 44 ft. high, is capable of handling 200,000 lbs. of water per hour in the de-aerator and 75,000 lbs. in the softener. The boiler will deliver 100,000 lbs. of superheat steam per hour at 610 lbs. pressure and a temperature of 650 degrees.

Follansbee Metals is the new name for the former Follansbee Metal Warehouses, a division of **Follansbee Steel Corp., Pittsburgh**.

Pratt & Whitney, Division Niles-Bement-Pond Co., West Hartford, Conn., has announced that its subsidiary, the **Potter & Johnson Co., Pawtucket, R. I.**, has taken over the manufacture of products formerly made by Newark Gear, Inc., Newark, N. J.



390,000 POUNDS is the weight of this anvil for one of the new 50,000 lb. drop forge hammers of Kropp Forge Co., Chicago. The anvil, one-third of the foundation required for the installation, took fifteen men and four trucks three days to unload from the flatcar. The entire installation, hammer and foundation, will weigh close to 8,000,000 lbs.



Think of **CENTRAL**

ALL HEAD STYLES • ALL METALS



1914 • 1954
SERVING
INDUSTRY
MORE THAN

40
YEARS

LOS ANGELES, CALIF.



CHICAGO, ILL.



KEENE, N. H.



PRECISION PRODUCTS—Central Screws with standard external, internal, countersunk or helical washers are supplied as single pre-assembled units with Phillips Recessed, standard slotted and clutch head screws—all head styles and all metals. With *predetermined* spring action and a free spinning position on the shank, they drive right and stay tight!

SALES ENGINEERING—The Central factory-trained man nearest you will gladly assist with your lockwasher assembly problems. He qualifies through long experience to recommend the correct Sems Lockwasher Screw that will, in each instance, insure a speedy, efficient, low-cost vibration-free assembly.

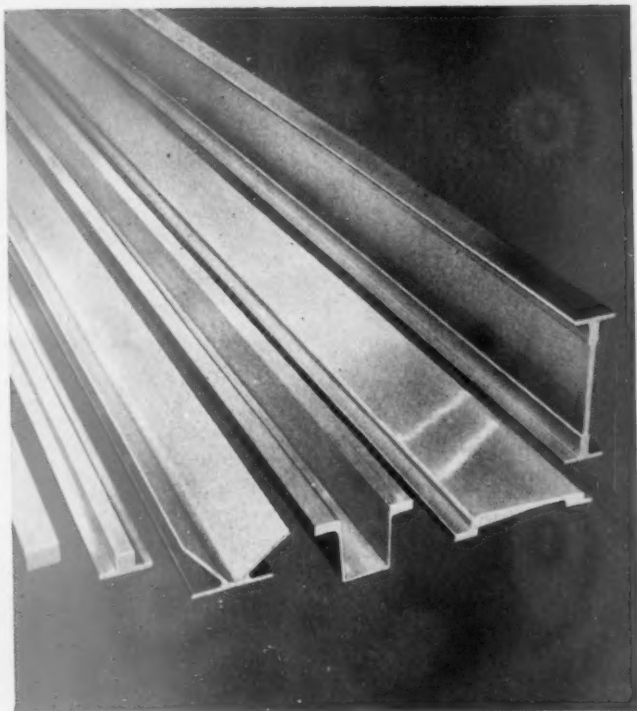
3 COMPLETE FACTORY STOCKS—Fast deliveries of Central's Sems Screws and other standard items in Central's complete line of fasteners are available f.o.b. from Chicago, Keene, N.H., and Los Angeles. Write—wire—phone—teletype now.



"You Can Depend on Central!"
CENTRAL SCREW COMPANY

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3028 E ELEVENTH ST., LOS ANGELES, 23 CALIF. • 149 EMERALD ST., KEENE, N. H.

KAISER ALUMINUM PRODUCTS

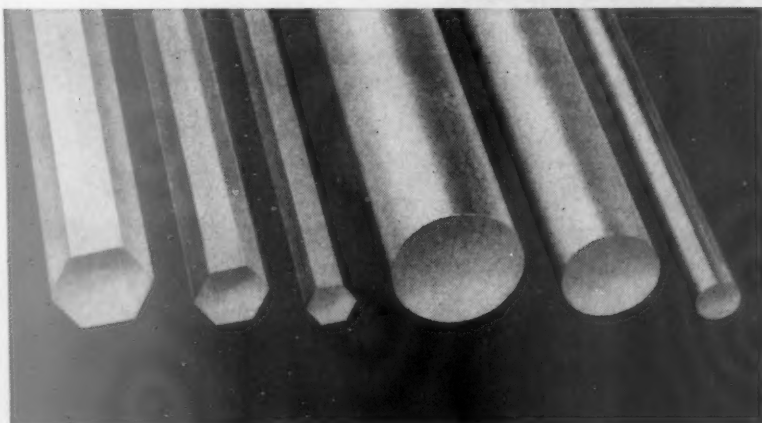
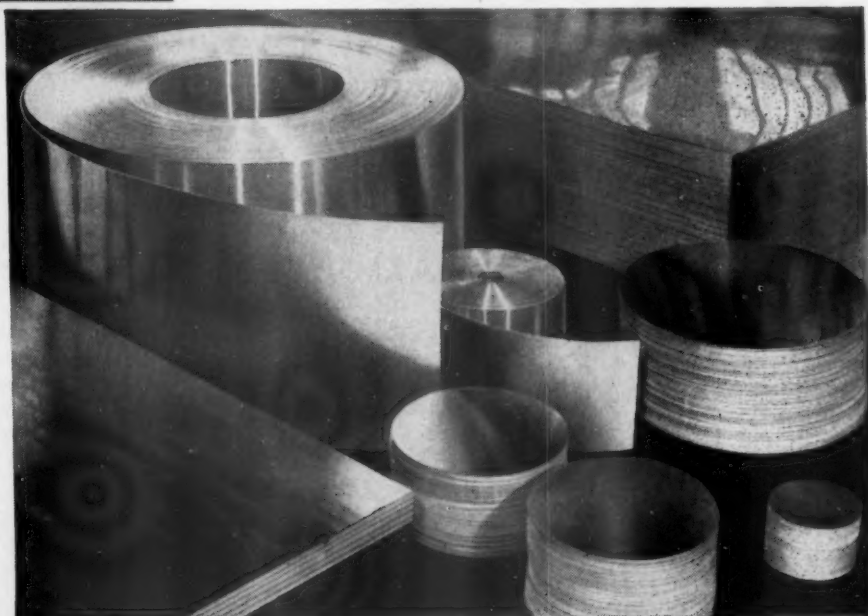


Extruded Shapes

All standard alloys are available in custom shapes (solid, semi-hollow and hollow), structural, rod and bar, and in extruded tube.

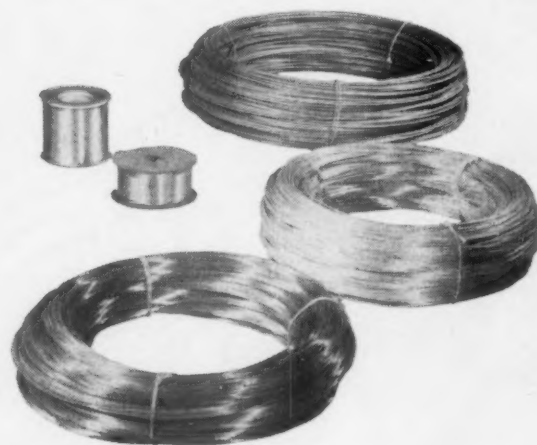
Sheet and Plate

Supplied as flat sheet, plate, coil sheet, circles in a complete range of alloys, sizes and tempers. Specialty sheets available on inquiry.



Rod and Bar

Available in a wide range of alloys in rolled and cold finished rod, round and hexagonal standard screw machine stock, hexagonal bar, redraw rod, rivet rod and round forging stock, square and rectangular bar.



Wire

Supplied as round drawn, hexagonal, rivet, welding, screen, EC, redraw.

for you...the nation's fabricators



Pig, Ingot and Billets to meet your specifications

Kaiser Aluminum produces Pig, Ingot and Extrusion Billets in a range of alloys and sizes to meet your specific requirements. In addition, Kaiser

Aluminum provides the services of its engineers to work closely with you to select proper alloys or to help improve production methods.

MORE THAN 85 per cent of Kaiser Aluminum's total production is sold in the form of these mill products for fabrication by customers. It's the highest percentage in the industry.

We believe we are ideally equipped to work with you, because serving manufacturers with basic aluminum is our primary business.

In recent years, our services have been expanded in order to keep pace with our greatly increased production capacity—which today stands at close to 30% of all the primary aluminum made in this country.

We have vastly expanded our national warehousing system, our distributor program, and our staff of metallurgists and field engineers.

We believe that the kind of service we offer—combined with the unsurpassed quality of Kaiser Aluminum—should be of particular interest to all aluminum fabricators in these days of stiffer competition.

For complete information, call or write any Kaiser

Aluminum sales office or one of our many distributors, located in principal cities. See our catalog in Sweet's Product Design File or write for copy. Kaiser Aluminum & Chemical Sales, Inc., General Sales Office, Palmolive Bldg., Chicago 11, Illinois. Executive Office, Kaiser Bldg., Oakland 12, California.

Other Kaiser Aluminum products include: industrial foil, and electrical conductor. Kaiser Aluminum also supplies household, freezer and broiler foil for home uses; Shade Screening for the building industry and roofing and siding sheet for farm and industrial buildings.

MAIL COUPON FOR FREE HANDBOOK

Send for the new Sheet and Plate Handbook. 152 pages. A "must" for every fabricator of aluminum.

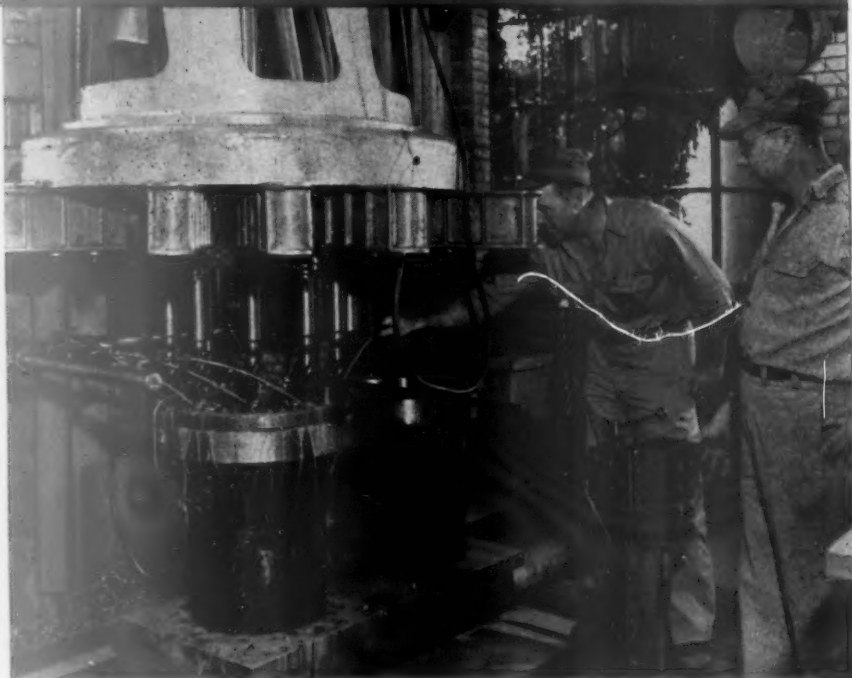
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INDUSTRIAL SERVICE DIVISION
51042 KAISER BLDG., OAKLAND 12, CALIFORNIA
Please send my free copy of "Sheet and Plate Handbook."

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Firm _____
Address _____
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Kaiser Aluminum

setting the pace—in growth, quality and service

FULL *8-Hour* SHIFTS WITHOUT A GRIND



These standard W & B high speed drills keep going for a full eight hours on each grinding—no shut-downs during shifts for resharpener or replacement of dull drills for this manufacturer of oil and gas well head equipment.

Casing heads are alloy steel having a Brinell hardness of 185-260. Drilling of bolt holes in casing head flange is done on a 16 spindle "Hole Hog." Operated at 126 R.P.M. and with a .015" feed per revolution, the high speed W & B drills quickly and efficiently complete the drilling of twenty 1½" diameter holes 3" deep in each flange.

This example of unusual drill durability and efficiency is indicative of the high performance you, too, can have by specifying W & B for your drilling operations.

YOUR INDUSTRIAL DISTRIBUTOR
Can Give You Quick Service
On Whitman & Barnes Tools.
Contact Him Today!

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40015 PLYMOUTH ROAD • PLYMOUTH, MICH.
NEW YORK • CHICAGO • LOS ANGELES • ATLANTA

For More Information Circle No. 289 on Inquiry Card—Page 17

Salkover Metal Processing of Illinois Inc., has moved to its new plant at 2550 Edginton Ave., Franklin Park, Ill.

Damascus Tube Co., Greenville, Penna., and Swan Engineering Co., Bloomfield, N. J., have consolidated operations.

E. I. Du Pont de Nemours and Co., Inc., Wilmington, Del., has announced the intention of building a new plant in California for the manufacture of tetraethyl lead and "Freon" refrigerants.

A giant ceramic pouring tube that can stand up under extreme temperature changes has been developed for a new pressure casting method for carbon steel, according to **Electro Refractories & Abrasives Corp.**, Buffalo, N. Y. It is being successfully used in pressure pouring the carbon steel into graphite molds to produce railroad freight car wheels by Griffin Wheel Co., Chicago.

International Minerals & Chemical Corp., Chicago, has acquired Sonsel Refractories Corp., Brighton, Mich. The newly acquired plant will continue production of zirconium refractories under a patented process as part of the Eastern Clay Products Department of International's Industrial Minerals Division.

Wilton Tool Mfg. Co., Inc., Chicago, is building a new, half-million dollar general office and factory building in Schiller Park, Ill.

Digital Instrument Co., Coral Gables, Fla., has been purchased by **Brush Electronics Co.**, Cleveland, a division of Clevite Corp.

Plax Corp., Hartford, Conn., has sold to **Westlake Plastics Co.**, Lenni Mills, Penna., its entire production equipment, applicable patents, etc., for extruding rods and tubes and molding heavy gage sheets of methacrylate, polyethylene, polystyrene and fluorocarbon.

A multiwall paper shipping sack manufacturing plant, under construction in Wilmington, Calif., since October, 1953, has now started operations, according to **Bemis Bros. Bag Co.**, St. Louis, Mo.

American Potash & Chemical Corp., Los Angeles, has adopted the trade name, "V-Bor", for its refined pentahydrate borax used in ceramics, glass, porcelain and other manufacturing processes.

One of the largest titanium dioxide and sulphuric acid plants in the world is being constructed in Baltimore, Md., by the **Glidden Co.**, Cleveland. The plant, which will cost some \$10,000,000 and cover 25 acres, is scheduled for completion by December, 1955.

For More Information Circle No. 290 on Inquiry Card—Page 17→

PURCHASING

Users praise Phillips Cross-Recessed-Head Screws



BENEKE TOILET SEATS depend exclusively on Phillips screws to fasten seat hinge. "The salesmen like them," says Ed Beneke, President in Charge of Sales, "because they give them extra selling points in neatness of appearance; are easier to handle and so increase their production." Forelady, Mrs. Pullen, here fastens screw in place.



SARGENT INTEGRALOCKS have a small lockset with a minimum size trim leaving a minimum space for insertion of screw driver when trim is fastened to door. "Inasmuch as this requires screw driver to be used at a 30° angle," points out George W. Wardwell, Product Engineer, "Phillips screws are absolutely essential — due to greater contact area. Slotted screws require driver to be in line with axis of screw." A carpenter here installs an Integralock.

A HEYWOOD WAKEFIELD SIDE CHAIR is here securely fastened with Phillips screws by Alfred Antil. "These screws are accepted as an integrated part of our manufacturing operations across the board," states Frank Parrish, Superintendent of the Experimental and Development Department. "Everyone at Heywood Wakefield — from purchasing to the craftsman on the bench — knows that the joints of our products will always be secured with Phillips screws." The screws assure structural strength, prevent damage from driver slippage.



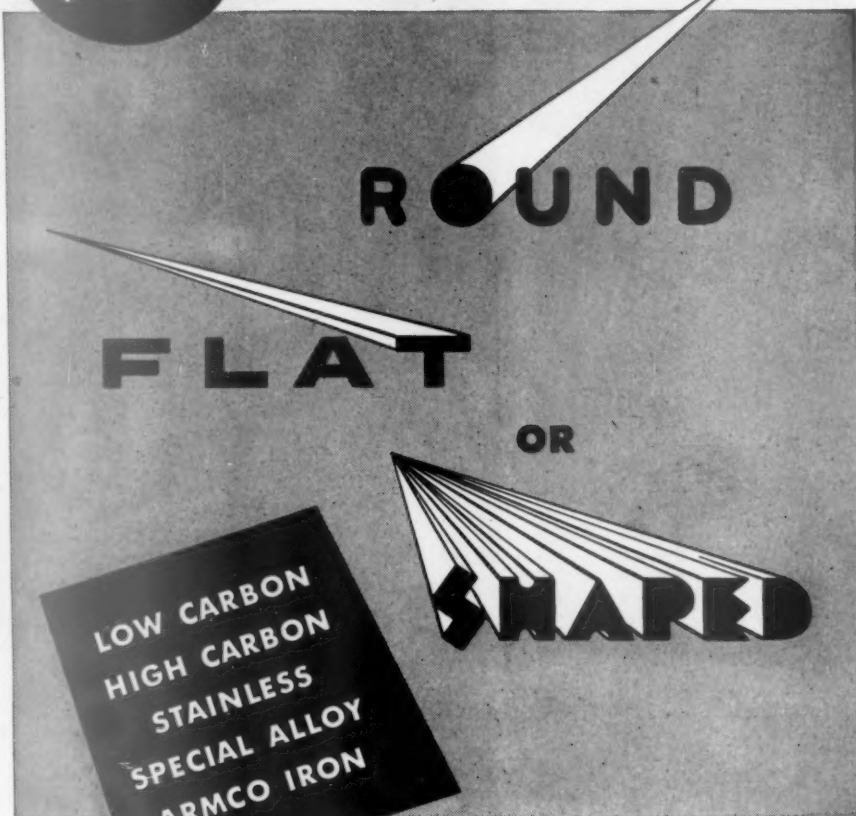
**THE FASTENERS
OF TODAY...
AND OF THE FUTURE**

**X marks the spot
... the mark of extra quality**

American Screw Company • Atlantic Screw Works, Inc. • The Blake & Johnson Co. • Central Screw Company • Continental Screw Company • The Eagle Lock Company • Elco Tool and Screw Corporation • Great Lakes Screw Corporation • The H. M. Harper Co. • The Lamson & Sessions Company • National Lock Company • The National Screw & Manufacturing Co. • Parker-Kalon Div. General American Transportation Corporation • Pheoll Manufacturing Co. • Rockford Screw Products Co. • Scovill Manufacturing Co. • Shakeproof • The Southington Hdwe. Mfg. Company • Sterling Bolt Company • Wales-Beech Corp.



PAGE Manufacturers' Wire



PAGE makes them all
YOU draw the Shape...
PAGE will draw the Wire

Cross-sectional areas up to .250" square;
widths up to 3/8"; width-to-thickness ratio
not to exceed 6 to 1.

Tell us the way you want it. We'll follow
your specifications.

Write or wire today

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**Page Steel and Wire Division
AMERICAN CHAIN & CABLE**

Monessen, Pa., Atlanta, Chicago, Denver, Detroit,
Houston, Los Angeles, New York, Philadelphia,
Portland, Ore., San Francisco, Bridgeport, Conn.

plus
**Welding
Electrodes
Wires
Rods**

The Sealol Corporation is moving its Providence manufacturing operations to a new plant in Warwick, R. I., about mid-November. The new plant will be ultra-modern, with soundproof ceilings, fluorescent lights and maximum window area. The building will provide 30,000 sq. ft. of floor space.

Willys Motors, Inc., a wholly-owned subsidiary of Kaiser Motors Corp., has purchased the business of Nest-A-Bin Co., Denver, and has begun volume production on the shipping container developed by the Colorado firm. The container is being manufactured by the newly-created Kaiser Nest-A-Bin Division of Willys at San Leandro, Calif.

Milwaukee Metal Working Co., Milwaukee, has changed its name to Wisconsin Hydraulics, Inc.

Bruning Brothers, Inc., Baltimore, has purchased the Sun and Sea Paint Co., Boca Raton, Fla.

Occupying a ground area of 94,000 sq. ft., the first unit of the new plant of Tapmatic Corporation has been completed in Costa Mesa, Calif.

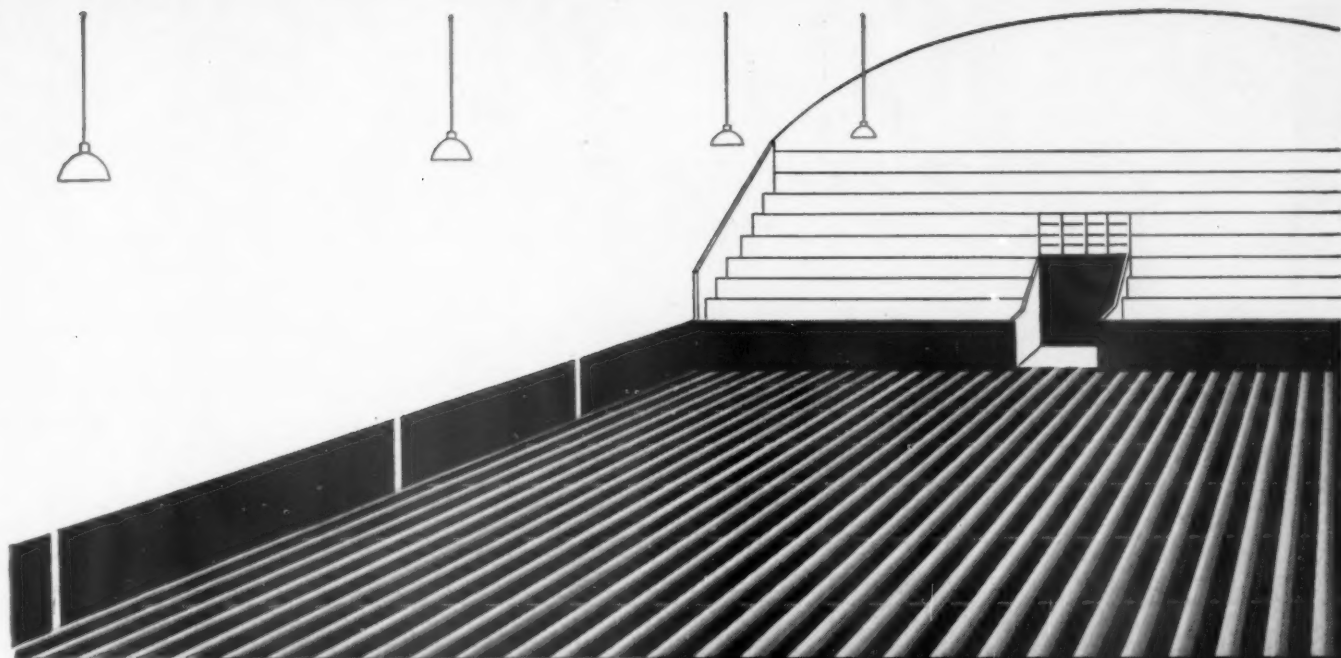
The building industry's newest and largest flush door manufacturing plant has just been opened by Atlas Plywood Corp., Boston, in Center, Texas. The plant is now producing 1000 doors per day with a possible production stepup to 1500.

Bausch & Lomb Optical Co., Rochester, N. Y., has opened a branch office in Recife, third largest city in Brazil.

Construction is well under way on the \$300,000 addition to the plant of Enamelstrip Corp., Allentown, Penna. It will be two stories high, 220 ft. long 160 ft. wide, increasing Enamelstrip's floor space by 48,000 sq. ft. Scheduled for completion by the end of the year, it is expected to nearly triple the firm's working force.

United States Plywood Corp., New York, has acquired Canadian Plywoods, Ltd., largest independent wholesale plywood distributor in Canada. Canadian Plywoods has a distributing unit in Montreal which, with a U. S. Plywood subsidiary at Toronto, will be operated as Weldwood Plywood Limited.

To increase casting capacity, an \$800,000 expansion and modernization program has been completed at Empire Steel Castings, Inc., Reading, Penna. The program included new sand storage bins, mechanized sand handling equipment, electric furnace of five tons capacity, core shop equipment, mono-rail pouring system, pouring area, high production molding equipment, shake-out unit and cleaning equipment and a conveyerized cleaning shop.



10 miles of

SPANG[®] CW STEEL PIPE



bring winter to Dartmouth's hockey team



When the Dartmouth College ice hockey team practiced for its big game with Harvard last season, nobody had to worry about the weather. It took 10 miles of *top-quality* SPANG CW Steel Pipe to do it . . . but now Dartmouth's skating rink has ideal ice conditions no matter how warm the weather.

In the new artificial ice system, made possible by contributions of alumni and friends, cooling brine is circulated through *top-quality* SPANG pipe by Frick ammonia refrigeration equipment. SPANG extra-heavy one-inch steel pipe, resting on steel supports and covered with sand, loops in parallel across the 16,000 ft rink area. Cold brine, pumped through the pipe, chills the sand so that water sprayed on its freezes immediately.

Here is just one more example of the many

and varied installations where *top-quality* SPANG CW Steel Pipe is giving *top-quality* service. What gives SPANG that extra quality that makes it a top choice among leading contractors and architects? Only the best steel is used for SPANG CW . . . it's *quality-controlled* throughout manufacture . . . and the finished product is *doubly* inspected assuring you the finest pipe for heating, plumbing, air conditioning, radiant heating and snow melting systems. *Top-quality* SPANG CW Pipe is easier to cut, thread, weld and bend, making installation faster and keeping costs lower.

When you're buying pipe, specify SPANG CW Steel Pipe. Write for complete information and for the name of your nearest SPANG Distributor.

Owner: Dartmouth College
Piping Contractor: Frick Co., Waynesboro, Pa.
General Contractor: Trumbull-Nelson Co., Inc., Hanover, New Hampshire

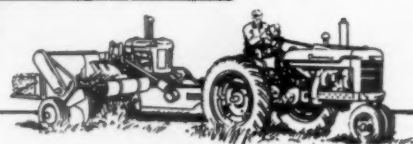
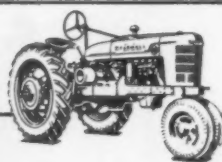
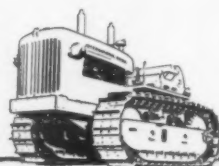
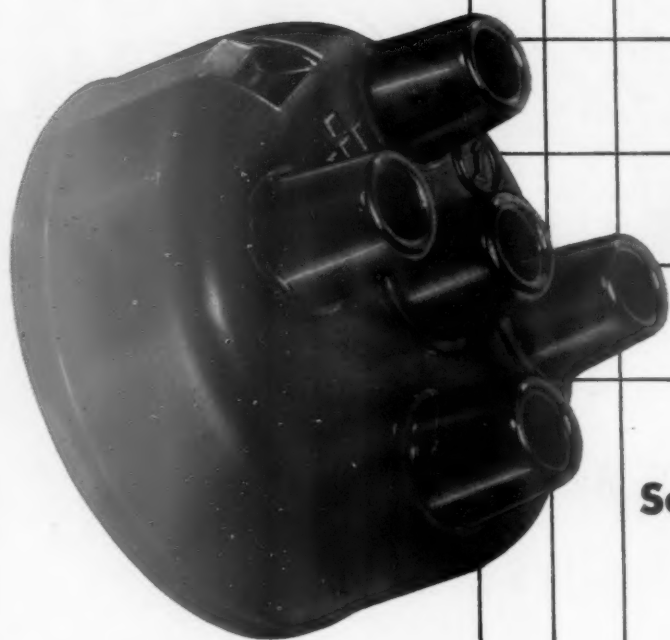


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DIVISION OF THE NATIONAL SUPPLY COMPANY
General Sales Office: Two Gateway Center, Pittsburgh, Pennsylvania. District Sales Offices: Atlanta, Boston, Detroit, Houston, Los Angeles, New York, Philadelphia, Pittsburgh, St. Louis.

For More Information Circle No. 292 on Inquiry Card—Page 17

they had to be certain...



**So INTERNATIONAL HARVESTER
chose RICHARDSON
to mold this plastic
distributor cap**

When a manufacturer like International Harvester uses a part for all the tractors, power units, and implements it produces—the figure runs into hundreds of thousands a year. And because each part has to conform to rigid I-H engineering specifications—it has to be *right*, too!

Obviously, I-H must turn to a plastics molder who has facilities for large-scale production and who can offer precision molding skill and the assurance of uniform quality combined with delivery as scheduled.

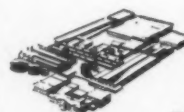
And that's why Richardson was selected to mold this plastic distributor cap.

For a quarter century, Richardson has been handling the "tough ones" for International Harvester. Why not turn to Richardson when you have a tough plastics job?

INSUROK



MOLDED & LAMINATED PLASTICS



MELROSE PARK, ILL.



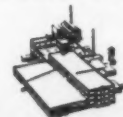
TYLER, TEX.



INDIANAPOLIS, IND.



NEWNAN, GA.



NEW BRUNSWICK, N. J.



OGDEN, UTAH


The RICHARDSON COMPANY

FOUNDED 1858—LOCKLAND, OHIO


2791 Lake Street, Melrose Park, Illinois (Chicago District)

SALES OFFICES IN PRINCIPAL CITIES

For More Information Circle No. 293 on Inquiry Card—Page 17



*Why does this packing
outwear others
in cold liquid service?*



*Because J-M NAVALON
contains and retains
more lubricant!*



**... and NAVALON® is
made of Ramie, nature's
strongest fibre**

J-M Navalon gives more value because it outwears other high quality packings in cold liquid service. Made by an exclusive process, it contains more lubricant to start with and retains more lubricant in service . . . resulting in less wear on equipment and longer packing life. Navalon has other unique features, too. It resists rot and mildew . . . its strength actually increases when wet

. . . the result: fewer shutdowns for repacking.

That's why Navalon is widely used to seal against fresh or salt water, brine, cold oils . . . and many other cold liquids. It has an excellent record of service on pumps, elevators, accumulators, reciprocating rods and plungers, stern tubes and rudder posts of ships. Available in full range of sizes, in styles 190 and

245 for industrial use, style 175 for marine use.

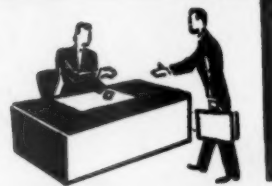
Your J-M Packing Distributor carries complete stocks of J-M Navalon and other high quality Johns-Manville Packings. He can help you choose the right one for your application. Call him for complete information or address Johns-Manville, Box 60, N.Y. 16, N.Y. In Canada, 199 Bay St., Toronto 1, Ont.



Johns-Manville PACKINGS & GASKETS

For More Information Circle No. 294 on Inquiry Card—Page 17

NEWS OF YOUR Suppliers



The board of directors of **Beaver Pipe Tools, Inc., Warren, O.**, has appointed Charles T. Everett as executive vice president and general manager, to succeed W. A. Phillis, president, who is retiring.



J. B. Kaymen



E. T. Bialashewski

Lamson Corp., Syracuse, N. Y., has appointed two new field engineers. John B. Kaymen will handle the Boston-Rhode Island territory, and Edward T. Bialashewski will operate in the Los Angeles area.

J. B. Lockhart, Jr., has been made manager of merchant and industrial sales for **Riegel Paper Corp., New York.**

The Witt Cornice Co., Cincinnati, has named Barker and Fleming, Inc., Chicago, as its sales representative in Michigan, northern Indiana, Minnesota and the Dakotas.

Gene A. Zwerner has been appointed district manager of the Washington, D. C., office of the **Link-Belt Co., Chicago.**

Theodore F. Eichstaedt has been appointed assistant manager of the Machinery and Tool Division of **Joseph T. Ryerson & Son, Inc., Chicago.** He was formerly manager of the machinery and tool department of the firm's Chicago plant.

Winston H. Palmer has been named assistant district manager of the Florida sales office, Eastern Metal Division, **Continental Can Co., New York.** He will headquarter at Winter Haven, Fla.

Pioneer Tool Engineering, Inc., El Segundo, Calif., has added three new distributors. They are: Meier Brass & Copper Co., Hazel Park, Michigan, for Michigan, Ohio and Indiana; Edgcomb Steel Corp., Hillside, N. J., for Pennsylvania, New York, Maryland, Delaware, New Jersey and New England; and Earl M. Jorgensen Co., Oakland, Calif., for the San Francisco-Oakland Bay area.

Atlas Powder Co., Wilmington, Del., has announced two changes in the sales staff of the company's chemicals department. Arthur G. Heinel, formerly in charge of the Atlanta office, has been named a technical representative in charge of the new sub-office in Richmond. He was succeeded in Atlanta by Adrian J. Stewart. Mr. Heinel will represent Atlas in Virginia, Washington, D. C., eastern West Virginia and North Carolina.

A. P. McGraw has been made regional manager for the Northeastern Region (New England and upper New York) of the Assemblies and Components Sales section, **General Electric Co., Plainville, Conn.** Temporarily, he will also serve as acting regional manager for the area consisting of southern New Jersey, Pennsylvania, Delaware, Maryland, Ohio, northern West Virginia, eastern Ohio and Washington, D. C. At the same time, it was announced that A. T. Allison had been named regional manager for the Southeastern Region. His area includes Virginia, North Carolina, South Carolina, Georgia, Florida, northern Alabama, eastern Tennessee, Kentucky, southern West Virginia, southern Indiana and southwestern Ohio. The new regional manager for the North Central Region is G. T. Myers. His territory is composed of northwestern Ohio, northern Indiana, Michigan, northern Illinois, Wisconsin, Iowa, Nebraska, Minnesota and North and South Dakota. Temporarily, he will act as regional manager of the South Central Region. This consists of southern Illinois, Missouri, Arkansas, Mississippi, Louisiana, Texas,

Oklahoma, Kansas, Colorado, New Mexico, southeastern Wyoming and western Tennessee.

The Detroit Stamping Co., Detroit, has announced that Harry C. Robeson, former factory manager, has been advanced to sales manager, and Herbert S. McMillan has been made assistant sales manager. Both promotions are in the firm's Stampings Division.

The Rodney Hunt Machine Co., Orange, Mass., has appointed Vernon J. Liberty as assistant manager of its Industrial Rolls Division.



J. F. Whitaker

Weller Electric Corp., Easton, Pa., has announced the appointment of Joseph F. Whitaker as vice president in charge of sales.

The Standard Transformer Co., Warren, Ohio, has appointed Peterson Engineering, Tulsa, as its representative in Oklahoma.

E. T. Larsen and Dr. W. C. Rueckel have been named vice presidents of the **Henry J. Kaiser Co., Oakland, Calif.** Mr. Larsen will be responsible for all engineering activities while Dr. Rueckel will handle development work and sales.

Which is the *CleCap*?



... the one you can get pronto!

A much-used fastener style these days—socket screws. But it's surprising how scarce they can be in *the size you want* RIGHT NOW! CleCap have made it a point to make and stock *all* the popular sizes in this popular style. What's more, you can get *extra large* sizes when you need them.

We can't resist a rave about the product—CleCap's double extruded Socket Screws . . . Real *sockets* you'll admire—they're true hex, sharp cornered to give the key good "purchase", and *clean*, clear to the bottom.

"Sockets" are just one of the fastener styles CleCap makes. On any of the items cataloged below, let CleCap show you how they can make your idea of delivery a reality. If you haven't tasted CleCap service you've missed a thrill.

The Cleveland Cap Screw Company

2922 East 79th Street • Cleveland 4, Ohio • VULcan 3-3700 TWX CV42

Warehouses: Chicago • Philadelphia • New York • Providence • Los Angeles

CLEVELAND *Top Quality* FASTENERS

Ferrous and Non-Ferrous: Bright, High Carbon and Alloy Steel Heat Treated, Brass, Silicon Bronze, Stainless Steel

Hex Head Cap Screws: ¼" to 2½" dia.

Socket Head Cap and Set Screws—Plain and Knurled: ¼" to 1½" dia. Also Flat and Button Head Styles.

Flat Head Cap Screws: ¼" to 1" dia.

Fillister Head: ¼" to 1¼" dia.

Set Screws—Square Head: ¼" to 1½" dia.

Milled Studs: ¼" to 1¼" dia.

Place Bolts: ¼" to 1¼" dia.

Structural Bolts to ASTM Specification A325

Tractor Bolts

Special Hot and Cold Headed Parts

Facilities to make larger diameters than listed.

Ask Your Jobber for CleCap!

Originators of the Kaufman *DOUBLE EXTRUSION* Process

For More Information Circle No. 296 on Inquiry Card—Page 17



the new molding material that's
both **TOUGH** and **GENTLE**

Ace-Hide is a new rubber-plastic molding material designed to take a beating without showing it. Its toughness, smoothness, resilience and excellent chemical resistance have already led to wide-spread use for things like chair arm pads, scuff guards, acid pails and golf bag tops.

Ace-Hide acid pail



Molded top for golf bag



Large molding is lid for beverage cooler



Ace-Hide is a special blend of rubber with plastic, hence is light in weight and has good electrical and thermal insulating properties. Rigidity and impact strength (to 10.0 Izod) can be varied to suit. Takes inserts well. Surface is smooth, shiny. Does not develop flexing cracks, and ages well. Ace molding facilities offer wide range of sizes and shapes. We'll be glad to make specific recommendations. Write today.

Ace-Hide and many other hard and soft rubber, plastics, and rubber-plastic blends are described in 80 pg. ACE Handbook. Write for your copy today!



ACE rubber and plastic products

AMERICAN HARD RUBBER COMPANY
93 WORTH STREET • NEW YORK 13, N. Y.

For More Information Circle No. 297 on Inquiry Card—Page 17

Robert J. Cole has been named Pacific Coast manager of the Construction Materials Division, **John A. Roebling's Sons Corp.**, Trenton, N. J. He will headquarter in the San Francisco office of the wholly-owned subsidiary of Colorado Fuel and Iron Corp.

Femco, Inc., Irwin, Pa., has appointed Raymond G. Kelley as sales engineer for Michigan, Minnesota and Wisconsin. He will work out of Wakefield, Mich.

A geographical realignment of sales divisions and a number of changes in top sales personnel has been announced by **Micro Switch**, Freeport, Ill., a division of Minneapolis-Honeywell Regulator Co. Previously, the U. S. was divided into four sales divisions. Under the new setup, there will be two sections—Eastern and Western. Emmett N. Hughes, former West Coast division sales manager, is now Western sales manager in charge of all sales operations on the West Coast and the Rocky Mountain states. His headquarters are in Los Angeles. John K. Lincoln, now Eastern sales manager, will headquarter in Freeport and supervise activities east of the Rocky Mountains. Anderson Wacaser, former Central Division manager, has been transferred to Micro Switch's home office to head up Market Research, a new section in the firm's sales department.

Allegheny Ludlum Steel Corp., Pittsburgh, has made Marlin R. Hemphill general manager in charge of its Carmet Division in Ferndale, Mich.

James F. Niblick is now secretary-treasurer and controller of the Spring Division, **Borg-Warner Corp.**, Chicago.

Associated Distributors-New Jersey, Inc., Newark, has been named a distributor for the **Whirlpool Corp.**, Chicago.

Shamrock Chemicals Corp., New York, has been appointed a distributor by **Warwick Wax Co., Inc.**, a subsidiary of Sun Chemical Corp., New York. Shamrock will handle Delaware and Pennsylvania.

A. F. Franz, president of **Colorado Fuel and Iron Corp.**, New York, has announced the appointment of Kathleen McTigue as his administrative assistant.

W. T. Bosworth has been appointed manager of sales of rotary hearth furnace and heat treating equipment for **Salem-Brosius, Inc.**, Pittsburgh.

Joseph Tykodi has been named factory sales representative in western New York for **Axelsson Mfg. Co. Division, Pressed Steel Car Co., Inc.**, Los Angeles. He will cover such cities as Buffalo, Niagara Falls, Rochester, Syracuse, Utica, Elmira, Binghamton and Watertown.

For More Information Circle No. 298 on Inquiry Card—Page 17→
PURCHASING



SPECIFY CLEVELAND REAMERS

For Smooth Finish and Economy

A complete line of Reamers, offering a wide range of types and sizes for every requirement. All are correctly engineered to give you accuracy, efficiency, long life and *more holes per grind*.

THE CLEVELAND TWIST DRILL CO.
1242 East 49th Street • Cleveland 14, Ohio
Stockrooms: New York 7 • Detroit 2 • Chicago 6 • Dallas 2 • San Francisco 5 • Los Angeles 58
E. P. Barrus, Ltd., London W. 3, England



TELEPHONE YOUR INDUSTRIAL SUPPLY DISTRIBUTOR



NEXT TIME...ORDER SCOTTISSUE TOWELS!

1. They drink up water like a thirsty camel.
2. They're strong — even when soaking wet.
3. They're so soft that many people use them as face cloths.
4. They're clean and white — of course.
5. They're double-fold to dry double-quick.

JUST ONE
SCOTTISSUE TOWEL
DOES THE JOB!



ScotTissue Towels have an exceptionally high fiber content. This "bulk," plus generous size and double fold, make a case of 3,750 ScotTissue Towels weigh 46 lbs.* Some paper towels cost less for 3,750 but are 10 to 20 lbs. lighter*—hence less drying power. Write for more facts. Scott Paper Company, Dept. P-8, Chester, Pa.

*Shipping weight

SCOTTISSUE



TOWELS

Symbol of the right kind of washroom

ScotTissue, Reg. U. S. Pat. Off.

For More Information Circle No. 299 on Inquiry Card—Page 17
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For More Information Circle No. 300 on Inquiry Card—Page 17→
PURCHASING

Qwik

with

Change



PACKAGED Motor Starter PARTS!



New PUSH BUTTON KIT

**OTHER
KITS...**

Selector Switches
Interlocks
Replacement Parts
Contacts
Coils
Overload Relays



EASY to Identify!

Easy-to-read catalogs, simplified motor control and overload relay selectors, illustrated service bulletins...these all combine to assure quick changes through easy parts identification.

EASY to Buy!

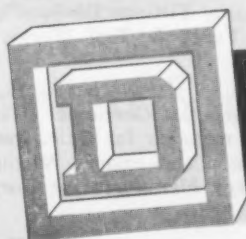
Conveniently packaged and labeled conversion parts are immediately available "off-the-shelf" from nationwide network of authorized Square D electrical distributors

FASTER to Install!

Conveniently packaged parts can be installed using only a screw driver and without disturbing any wiring

*Write for Bulletin 9999. Address Square D Company,
4041 North Richards Street, Milwaukee 12, Wisconsin.*

ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS



SQUARE D COMPANY

PAGE FENCE *Since 1883*

• AMERICA'S FIRST WIRE FENCE •



• Page Chain Link Fence, pioneered by Page and made only by Page, is quality controlled from raw metal to erected fence. Whether you choose heavily-galvanized Copper Bearing Steel, or long-lasting Stainless Steel, or corrosion-resisting Aluminum, you'll have a rugged fence on sturdy metal posts deep-set in concrete. Choose any one of 8 basic styles, varied by heights, types of gates, posts, top rails and barbed wire strands for extra protection. And to be sure of reliable workmanship your fence will be expertly erected by a specially trained firm. For helpful Page data and name of member nearest you...

Write to PAGE FENCE ASSOCIATION, Monessen, Pa., or look in Thomas' Register for listing of Page Chain Link Fence Distributors under "PAGE STEEL AND WIRE DIVISION," or see MacRae's Blue Book for listing under "FENCING, WIRE, LINK," or consult Sweet's Industrial Construction File. PRODUCT OF PAGE STEEL & WIRE DIVISION OF AMERICAN CHAIN & CABLE COMPANY, INC. For More Information Circle No. 301 on Inquiry Card—Page 17

HANDEEZ

THE HAND CLEANING COMPOUND
THAT REMOVES GROUND-IN GRIME
GENTLY AND SAFELY

Shop grime works deeply into pores . . . its residue is a contributory factor in dermatitis. Tiny skin cuts caused by harsh abrasives are entering points for skin infections. HANDEEZ lifts hard-to-remove grime from the pores by means of a sterilized vegetable emollient. The result: clean, smooth skin, even where cutting oils and other stubborn shop grime are present.

HANDEEZ is ideal for both shop and office use.

Write for literature, or see your
Dolge Service Man.

FOR
FREE SANITARY SURVEY
OF YOUR PREMISES
SEE YOUR DOLGE SERVICE MAN

Dependable
DOLGE
WESTPORT, CONNECTICUT

For More Information Circle No. 302 on Inquiry Card—Page 17

Ralph M. Keenan is now a sales representative for Follansbee Metals, a division of Follansbee Steel Corp., Pittsburgh.

The W. H. Summers Co., Cleveland, has been appointed a distributor for Cleveland and northern Ohio by the Republic Rubber Division, Lee Rubber & Tire Corp., Youngstown, Ohio.

The appointment of Henry W. Doctor as a district sales manager for the Tubular Products Division has been announced by the Babcock & Wilcox Co., New York City. He will be in charge of the new Cincinnati office and will supervise operations in southern Ohio, southern Indiana, Kentucky, Tennessee, Alabama, Georgia, South Carolina, North Carolina and Florida.

The formation of the Petrochemicals Department's sales organization to handle most of the products of the Fortier plant in New Orleans of the American Cyanamid Co., New York, has been announced. Named to posts in the new sales group are Dr. V. E. Wellman, manager; Dr. A. J. Weith, assistant sales manager; George C. Voss, district sales manager with headquarters in New York; and Frank W. Miner, district sales manager in Chicago. The New York office will cover New York, New Jersey, eastern Pennsylvania and Maryland. Chicago will handle Minnesota, Michigan, Illinois, Indiana and Wisconsin.

The Transo Division, Le Roi Co., Milwaukee, has named James R. Harwood as sales manager.

Colman Curtiss, Jr., has joined the S. M. Jones Co., Toledo, a division of Buffalo-Eclipse Corp. He is now a vice president of the Jones Co.

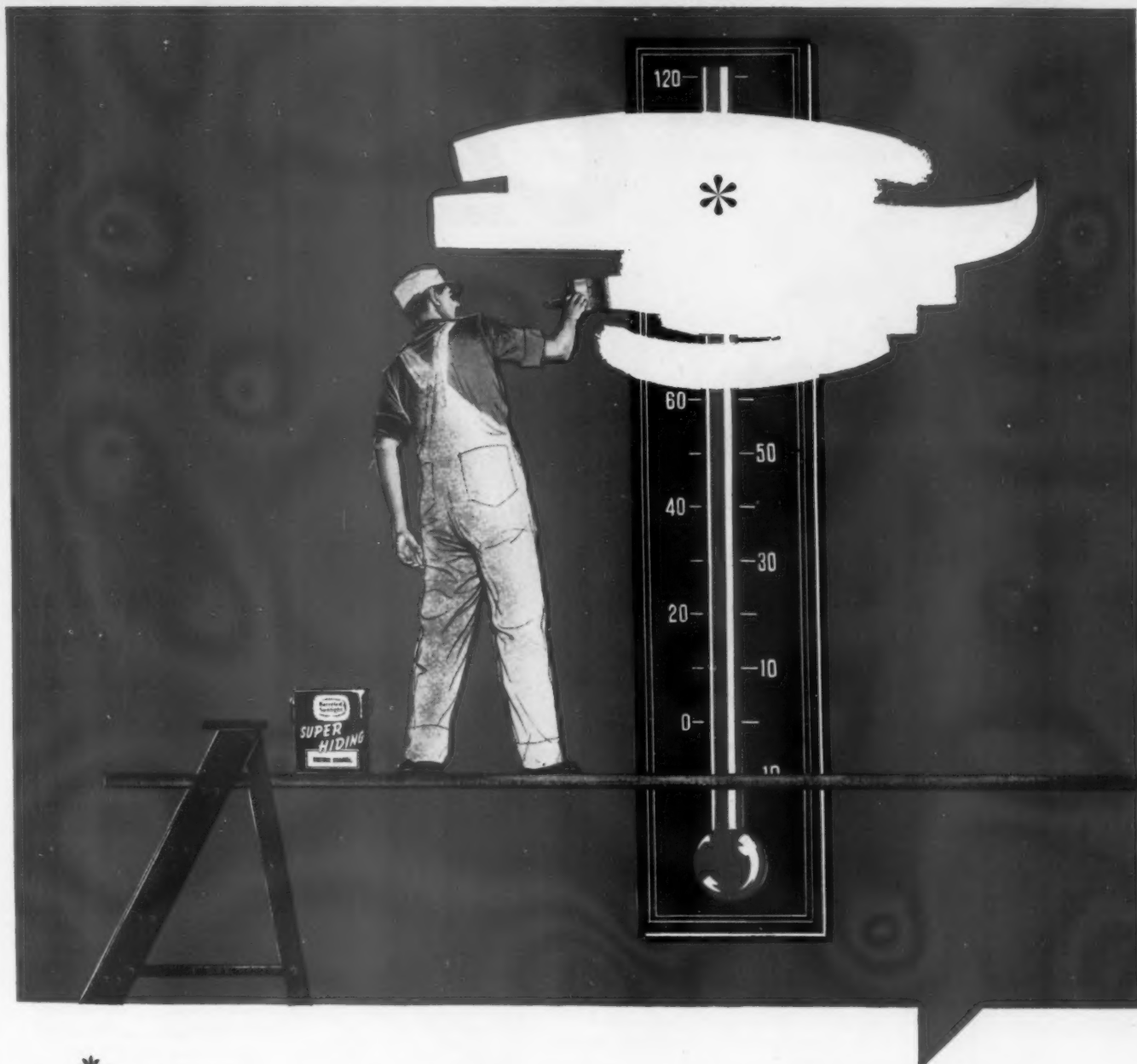
The N. W. Door Co., Chicago, is now manufacturer's agent for the Taft-Peirce Mfg. Co., Woonsocket, R. I., in the Illinois areas of Chicago, Rockford, Peoria and in the South Bend, Ind., area.

The Semi-Conductor Division, Radio Receptor Co., Inc., New York, has appointed Martin Mann Associates as sales representatives in the southern California/Arizona territory.

Miller Fluid Power Co., Melrose Park, Ill., has appointed James E. McComb as field engineer for the San Francisco area.

Robert Bader has been named sales engineer at Houston, Texas, for the Welding Fittings Division of the Bonney Forge & Tool Works, Allentown, Pa.

Frank M. Goodman is now district sales manager for Ohio, western Pennsylvania and eastern Michigan for the Maurey Manufacturing Corp., Chicago.



*

The Paint that Beats the Heat (AND DOESN'T MIND THE HUMIDITY)

Most white paints will turn chicken...yellow...at even the thought of heat and chemical fumes. But not Barreled Sunlight's *Super Hiding** Chemic Enamel. No sir! In interior areas exposed to dry heat and the discoloring action of chemical fumes, a one coat paint job with Barreled Sunlight Super Chemic Enamel will stay as white as the day it went on, for years.

The reason for this is two-fold. First, through the unique, secret "Rice Process", Barreled Sunlight has unmatched methods of making white paints that will stay white under toughest conditions. And second, Barreled Sunlight has devoted nearly one hundred years to the solution of tough paint problems for industrial, institutional and commercial buildings.

Why not, right now, send for the complete catalog of Barreled Sunlight Paints that are solving problems and cutting painting costs for some of the biggest names in industry? Barreled Sunlight Paint Co., 18-J Dudley St., Providence 1, R. I.

*Reg. U. S. Pat. Off.



Barreled Sunlight *Paints*

In whitest white or clean, clear, wanted colors, there's a Barreled Sunlight Paint for every job

For More Information Circle No. 303 on Inquiry Card—Page 17

call **Carey** ... for everything in Asbestos

... these Carey products
go together on job after job ...
reduce costs, increase profits!

Pipe Coverings—Super-Light 85% Magnesia Precision Molded blocks and sections—Tempchex—Hi-Temp 19—Asbestos Air Cell—Wool Felt and other quality insulating materials for high and low temperatures.

Asbestos Paper—For wrapping hot air furnace pipes—making gaskets, filters and discs.

Asbestos Millboard—For fire screens, partitions, range lining, radiator recesses—wherever heat-resistant, fire-resistant material is required.

MW-50 Insulation Cement—The leading monolithic cement. Maximum insulation value; toughness, hardness and excellent sticking properties. Most efficient for large area construction—recommended for maintenance of insulated surfaces. Easily and quickly applied.

Asbestos Insulation Cements—For all types of heat insulation jobs... from pointing up fittings to final surfacing insulation. Special types for specific requirements.

Asbestos Furnace Cement—Developed especially for mounting furnaces, stoves, boilers and flue pipes—for setting or patching refractories, cementing joints and cracks exposed to heat. For temperatures up to 2000° F.

Asbesto-Sorb—Thirsty fibers of asbestos that soak up oil, grease, water, chemicals, help maintain safety underfoot.

these CAREY offices
are as close as
your telephone

ATLANTA.....LAmar 5451
BOSTON.....CHarleston 2-1725
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CLEVELAND.....FL 1-8505
DALLAS.....LOgan 5621
DETROIT.....TRinity 5-4680
INDIANAPOLIS.....Riley 7332
LOS ANGELES.....Richmond 5207
MONTREAL.....UNiversity 6-4086
NEW YORK.....Vanderbilt 6-1530
PHILADELPHIA.....BALdwin 9-6430
PITTSBURGH.....GRant 1-7490
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Lockland, Cincinnati 15, Ohio
Department PU-10

Gentlemen: Please rush my free copy of the Carey Reference Manual for Asphalt, Asbestos and Magnesia Products.

NAME

COMPANY

ADDRESS

CITY STATE

For More Information Circle No. 304 on Inquiry Card—Page 17

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Carey

The Philip Carey Mfg. Company, Lockland, Cincinnati 15, Ohio
In Canada: The Philip Carey Co., Ltd., 277 Duke St., Montreal, 3 P. Q.

For More Information Circle No. 305 on Inquiry Card—Page 17→

PURCHASING



Mr. Paul Herr, director of Air Conditioning Division, Daffin Manufacturing Co., Lancaster, Pa., tells why they use Aico Molded Plastics:

... being determined to produce a really efficient home humidifier, we realized the importance of precision craftsmanship in all its parts. When we were faced with the need for extreme precision in the plastic pump impeller we planned to use, a friend suggested we turn the job over to American Insulator. Ever since, Aico has been supplying us production run parts held to a .005 tolerance. A remarkable example of precision plastics molding!"



New **Daffin** home humidifier
keeps profits from drying up
by replacing 8 metal parts
with molded plastics impeller



Let Aico help you use plastics

We have prepared several useful tools to help you get the full production and cost saving benefits of molded plastics. Just check the coupon for the ones you want. There's no obligation.

Please send me

☐ The Aico Plastics Applicator (gives complete properties, molding methods, etc.)

☐ "What you should know about Reinforced Plastics" (applications, properties and molding)

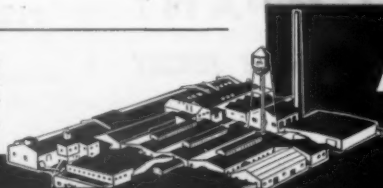
☐ Aico Plant Facilities Booklet (what a modern molder needs to produce precision plastic moldings)

Name _____ Position _____

Company _____

Address _____

Complete plastics molding service including engineering counsel, mold making, compression, injection and cold molding as well as the molding of reinforced plastics.



THERE are many ways plastics can reduce manufacturing costs. The Daffin impeller is a good example. Instead of buying numerous separate parts, many of them having to be machined, Daffin Manufacturing simplified purchasing, eliminated many assembly operations . . . and obtained more efficient operation by using one plastic molding. And, because Aico is so completely equipped as a molder, Daffin was able to obtain the other important parts for their new humidifier from *one* source and further reduce costs. If you have a similar need for plastics, get in touch with Aico today

AMERICAN INSULATOR

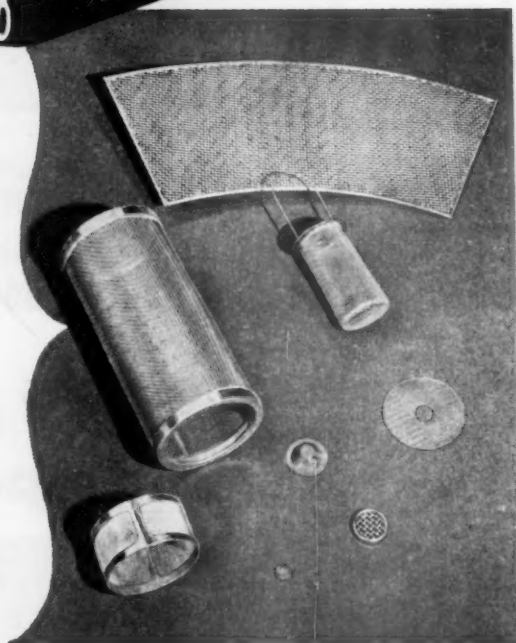
Since 1916

NEW FREEDOM, PA.

Our Slogan...



applies
also
to
"fabricated"
wire
cloth
inserts



Our slogan, Newark for Accuracy, has long been known to users of bulk wire mesh cloth, wire space cloth and wire filter cloth. It is now becoming more and more familiar to users of parts fabricated from wire cloth made by a fast-growing division of our company.

These parts, similar to those illustrated, are fabricated or assembled for our customers by skilled workmen in our large department specializing in this work. We are equipped to handle small lots or in production quantities of anything from large jet intake screens to tiny fuel pump strainers.

We shall be glad to quote on your requirements; and, if necessary, our experienced engineers stand ready to assist you in the design of the part so as to make the best use of the mesh and to assure the most economical manufacture of the part as a whole.

Remember, since we weave the cloth used, and do all the necessary cutting, fitting, stamping, punching, forming, binding, welding and soldering; there is only one responsibility . . . OUR responsibility . . . to deliver parts that live up to our slogan — Newark for Accuracy.

We can furnish wire cloth woven from all commercially used metals. Sizes range from 4 inches (space cloth) to 400 mesh.

Newark Wire Cloth COMPANY

351 VERONA AVENUE • NEWARK 4, NEW JERSEY

For More Information Circle No. 295 on Inquiry Card—Page 17

Raytheon Manufacturing Co., Waltham, Mass., has announced that its New York office has moved to 589 Fifth Ave.

Insular Lumber Sales Corp., Philadelphia, has appointed Joseph L. Stearns as sales manager.

1 1 1

Crude Rubber Prices to Drop?

"Consumption of natural rubber in the United States will decline if the present market price for this material maintains or goes higher," according to W. S. Richardson, president of the B. F. Goodrich Co.

"The current competitive situation between natural rubber and the principal general purpose synthetic rubber—GR-S—in this country is such that, for a wide range of uses, economic considerations will influence the choice of materials. When natural rubber prices are higher than GR-S prices, as is now true, manufacturers will of necessity consider the lower cost man-made material," Richardson said.

"The result will be that U. S. industry will not consume this year as large a quantity of natural rubber as previously had been predicted by industry statisticians. In April of this year, it was estimated that about 620,000 long tons of natural rubber would be used in the United States in 1954, or slightly more than half of the total estimated new rubber consumption of 1,235,000 tons. This substantial increase over the 553,000 tons consumed in 1953 appeared probable in view of the lower prices for natural rubber which had prevailed during the preceding six months.

"But if the anticipated lower prices are not realized," continued Mr. Richardson, "American manufacturers undoubtedly will revise their forward schedules so that the quantity of natural rubber which will be used during the last half of this year will be lower than previously planned and consumption during the early part of next year will also decline."

"Currently, the world stocks of natural rubber and the rate of production of this important material appear to be adequate to supply the probable demand during the next twelve months," Richardson concluded.

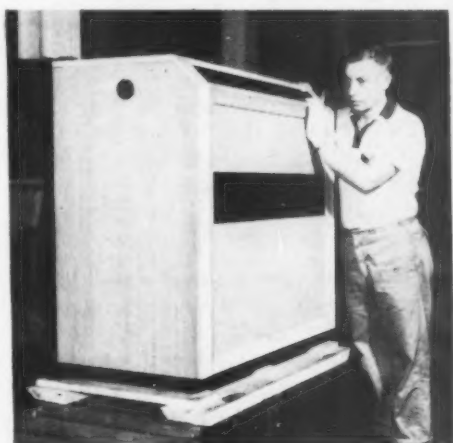
**FOR FURTHER INFORMATION
ON PRODUCTS IN THIS ISSUE
PLEASE USE INQUIRY CARD
ON PAGE 17**

"We keep our new look—new—

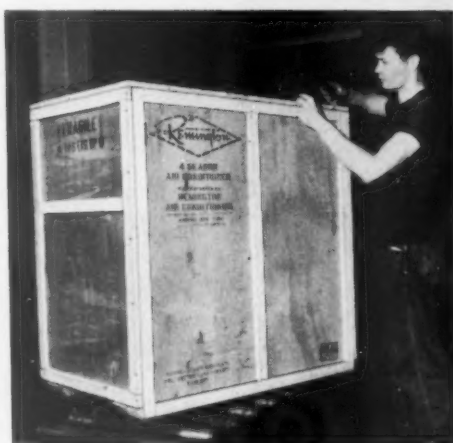
*from Bombay to Birmingham,"
says Fred Stidfole, Vice Pres.,
Remington Corporation*

"After all the money and effort we put into the fine mechanism and appearance of a Remington Console air conditioner, we want it to reach the customer in the same condition it leaves our plant — *perfect*," Mr. Stidfole declared.

"We turned to Atlas Plywood to study the 'safe transit' problem of the unit as carefully as we studied its design and manufacture. The Remington conditioner never arrives travel-weary!"



It's a beauty, isn't it? A beauty that will stay unmarred from the time it leaves Remington's plant at Auburn, New York, until it reaches the user. Jolts, jars and bumps of travel can't injure either mechanism or cabinet, thanks to the way this console is packed for shipment. Remington is one of the great names in console air conditioning . . . ships *all* they make in —



Atlas Plywood cases . . . for safe transit. Remington travel-tested many shipping containers . . . picked the Atlas-engineered case over others that cost more to buy and to ship. The container cushions the product for complete protection — yet doesn't touch the conditioner itself at any point. "Perfect," says the Vice President. "Reasonable in cost," confirms his comptroller.

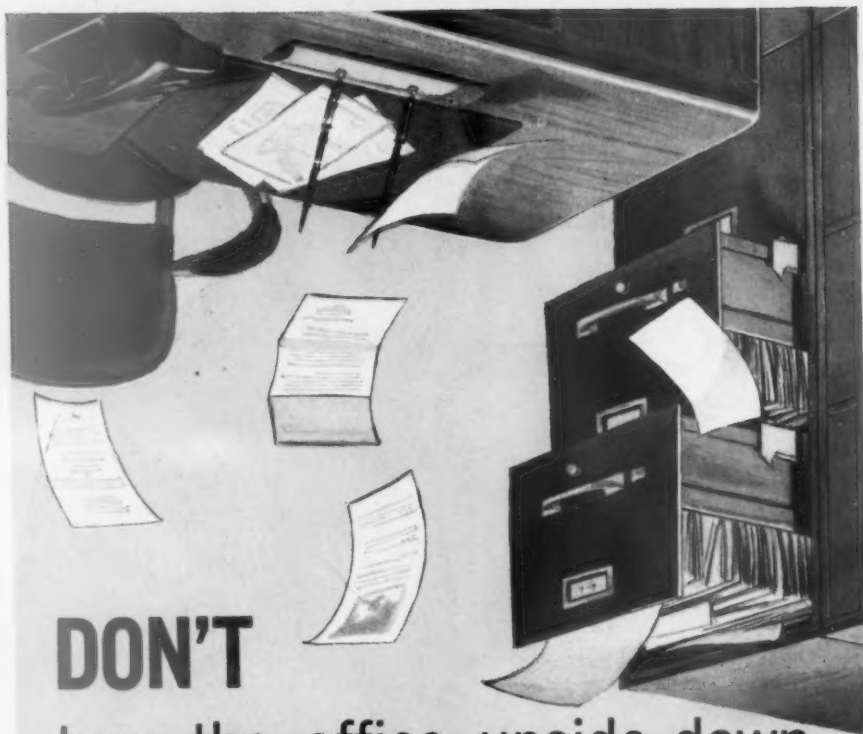
What about you? Do you risk wasted dollars due to product damage or increased shipping costs from unreliable containers? Send for free informative, illustrated 24-page booklet, "How Atlas Plywood Cuts Your Shipping Costs . . . Safely," — or see your Atlas Plywood representative (Classified Telephone Directory). Learn about the remarkable testing laboratory where Atlas Plywood containers win their *lab-tested* label. Atlas Plywood Corporation, Dept. P-2, 1432 Statler Building, Boston 16, Massachusetts.

Atlas Plywood

CORPORATION

FROM AMERICAN FOREST TO FINISHED PRODUCT
PLYWOOD CONTAINERS • FLUSH DOORS • HARDWOOD PANELS





DON'T
turn the office upside-down
when you need a supplier...



LOOK in the 'yellow pages'
of your telephone directory!

AMERICA'S BUYING GUIDE FOR OVER 60 YEARS



For More Information Circle No. 307 on Inquiry Card—Page 17

Operation Clean-Sweep

(Continued from page 84)

The Department of Defense surplus property is sold almost exclusively by competitive sealed bid or by auction. Negotiated sales are possible only for very small quantities, and under stringent restrictions.

Will there be any fixed price sales?

This method is used to a very limited extent for small lots, but is discouraged by some of the military departments. It would not be a principal means for surplus disposal.

What about windfall profits? One instance that made the headlines was the sale of military decorations as brass, when in fact they were silver. What safeguards are there against similar errors?

The instance to which you refer occurred at an Air Force depot. The element of human error is possible when huge quantities of property are being disposed of promptly. Considering the thousands upon thousands of items which are sold each day, the number of errors is amazingly low.

What steps are being taken to prevent surpluses from being warehoused, and virtually lost? We have all heard stories such as accumulations of saddles for World War I cavalry requirements being found in cleaning up warehouses after World War II.

Operation Clean-Sweep's goal is to identify all items, including items such as those, and to rid the military supply system of them.

What is the physical condition of Department of Defense owned surpluses?

It varies from unused to scrap. Some has no value, and must be abandoned or destroyed. Other items, like obsolete parts, are usable.

I understand that the Department of Defense has been given wide latitude in disposal, but that the General Services Administration does also have a disposal function. What does GSA do?

GSA provides Government-wide policy guidance on utilization of excess and disposal of surplus property.

On so-called common-use items, will these be disposed of by GSA only to other Government agencies? Or will some of these

(Please turn to page 288)

HOW DO YOUR SALESMEN THINK OF THE PA?



STUMBLING BLOCK...



OR STEPPING STONE?

Many a sale — which might have been an order, with repeat orders to follow — has been killed on the Purchasing Agent's desk. The difference is often a salesman who tries to bypass the PA . . . as against a salesman who sells the PA first, last and always.

If you expect your salesmen to cultivate the PA, isn't it

plain common sense — and good sales policy — to make sure your advertising doesn't bypass him? Do as most leading industrial advertisers do — use **PURCHASING** Magazine. It gives you the largest available coverage of industrial purchasing executives . . . is the one business publication purchasing men read regularly.

If you sell an industrial product . . .

*put **PURCHASING** power behind it!*

PURCHASING MAGAZINE

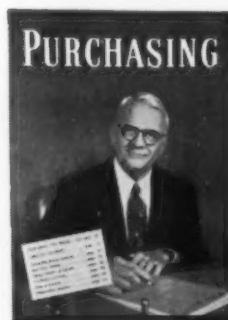
205 East 42nd Street, New York 17, N. Y.

The basic magazine on any industrial advertising schedule!

NBP

ABC

EPA



A CONOVER - MAST PUBLICATION

Depend on **LADISH**

**To Meet All Your Fittings Needs
With an Unsurpassed Range
of Sizes and Materials**

1

**BUTT
WELDING
FITTINGS**

2

**A.S.A.
FORGED
FLANGES**

3

**FORGED
SCREWED OR
SOCKET WELD
FITTINGS**

4

**T.E.M.A.
HUB & RING
FLANGES**

5

**LONG
WELDING
NECKS**

6

**LARGE
DIAMETER
FLANGES
AND RINGS**

Available in...



Complete Service ...



1/2 INCH
THROUGH
42 INCHES



1/2 INCH
THROUGH
24 INCHES



1/2 INCH
THROUGH
4 INCHES



6 INCHES
THROUGH
46 INCHES



1/2 INCH
THROUGH
24 INCHES



UP THROUGH
20 FEET O.D.

CARBON, STAINLESS AND ALLOY STEELS,
ALUMINUM, NICKEL AND OTHER
FERROUS AND NON-FERROUS METALS

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For dependable service that results from an ideal combination of broad line and ample stock... specify and buy LADISH... the Controlled Quality line that offers a complete range of sizes, types, weights, pressure ratings and materials needed for virtually any piping installation. Your local Ladish distributor's ample stock is backed by complete factory inventories to keep your piping jobs on schedule. So, for *complete service* in fittings... specify and buy LADISH.



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THE COMPLETE *Controlled Quality* FITTINGS LINE
PRODUCED TO ONE STANDARD OF UNSURPASSED QUALITY

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"Business Publications are essential tools of management"

"To keep abreast of rapidly developing techniques in all areas of business operations," says Mr. Coleman, "is not an easy task. Yet, if management is to discharge the responsibilities laid upon it, it must be informed both of technical developments and, indeed, of events and trends of the nation as a whole."

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ized know-how and advertising to the men who make decisions in the businesses, industries, sciences and professions...pin-pointing your audience in the market of your choice. Write for list of NBP publications and the latest "Here's How" booklet, "How We Use the Business Press and Why" by William C. Sproull, Director of Advertising of the Burroughs Corp., Detroit.



The case of the



Handbag product of The Randolph-Rand Corporation, New Rochelle, New York.

A well-known handbag manufacturer who'd been having a problem getting a beautiful finish on brass frames at a low production cost called on Bridgeport's Technical Service for assistance.

Here's the case history: After careful study of his problem, a Bridgeport Fine Grain Brass — *custom made to the exact grain size best suited to the manufacturer's requirements* — was recommended. This vanity case quality metal was selected because the fine grain surface needs little finishing and the brass works well. Look at those 90° bends, for example, and notice how the brass is stiff enough to hold the cloth of the bag by itself.

By using Bridgeport Fine Grain Brass and improved techniques, a beautiful, lustrous finish was attained and *production per man in the finishing department increased five times.*

This is another case history to prove that *no single fine grain brass can do all jobs well.* A whole range of fine grain sizes is available, and since there is no one pat answer for all finishing problems, Bridgeport recommends the exact fine grain size only after consideration of all factors.

To find out how Bridgeport can help you improve your product and lower manufacturing costs with the right metal for your needs, call your nearest Bridgeport Sales Office.

Write for a free copy of Bridgeport's folder on Grain Size — "The Fourth Dimension."

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Mills at Bridgeport, Conn., Indianapolis, Ind., and Adrian, Mich.

In Canada: Noranda Copper and Brass Limited, Montreal

For More Information Circle No. 309 on Inquiry Card—Page 17



in Perkins custom-made Gears

We have manufactured precision gears to customers' specifications for over thirty years. This collective experience enables us to approach any gear engineering problem with a vast amount of "hindsight." For no matter how exacting your particular requirements may be, they cannot exceed those of many of our regular customers. The return of a buyer's market places a premium on quality. And if — in the product you manufacture, quality is synonymous with trouble-free power transmission — our gear engineering service will be of great value to you right now. Ask us for suggestions, ideas and cost estimates today.

PERKINS MAKES: helical gears, bevel gears, sprockets, ratchets, worm gears, spiral gears, spur gears with shaved or ground teeth, ground thread worms.

NOTE: The PERKINS PRECISION SPRING COILER is the latest development in the spring coiler field and eliminates entirely the use of arbors and long set-up time. It is a complete self-sufficient machine and enables you to make the spring you want when you want it—in seconds. The coiler produces any type of spring, in any diameter and any pitch with this range: Wire sizes .005 to .125. Diameter, from 3/32" to 12" and larger. Size of the compact coiler is only 7 1/2 x 16". A POWER MODEL mounted on a welded steel console base is also available. Full information on request.

PERKINS Machine & Gear Co.
WEST SPRINGFIELD, MASSACHUSETTS

For More Information Circle No. 310 on Inquiry Card—Page 17

Operation Clean-Sweep

(Continued from page 282)

items be sold to non-Government users?

GSA screens civilian agency requirements for common-use items, and arranges for transfer of such items where the need exists. If there are no Government requirements for such property, it is then sold by the holding activity.

1 1 1

Recent Court Decisions

(Continued from page 130)

tract, and gave Zion's Cooperative Mercantile of Salt Lake City the franchise.

The appliance company filed suit against Servel alleging that its contract was wrongfully cancelled. The important fact introduced during the trial is that Servel maintains no place of business of any kind in Utah. Moreover, it has no office or salaried employee located in the state.

Nevertheless, the appliance company filed the suit and served summons on Servel by serving one Reid, regional manager for Servel, who was temporarily within the state of Utah, staying at a hotel. It was contended by the counsel for the appliance company that Servel was "doing business" in Utah because its regional service manager often serviced Servel's products in the state of Utah.

During the trial the testimony showed that under Servel's contract with the appliance company title to all shipments passed from Servel in Indiana. The contract required the appliance company to handle all the business of marketing Servel products in Utah, to maintain agreements for distribution to local dealers, and to maintain an installation and service department.

Further testimony showed that the regional service manager apparently had *without any authority* serviced all of Servel's appliances in the state of Utah, which would have resulted in the appliance company "doing business" in Utah if the regional manager had been authorized by the Servel company to service and repair appliances. However, as the regional manager had no authority to perform service or repair work, the higher court held that Servel could not be sued by the

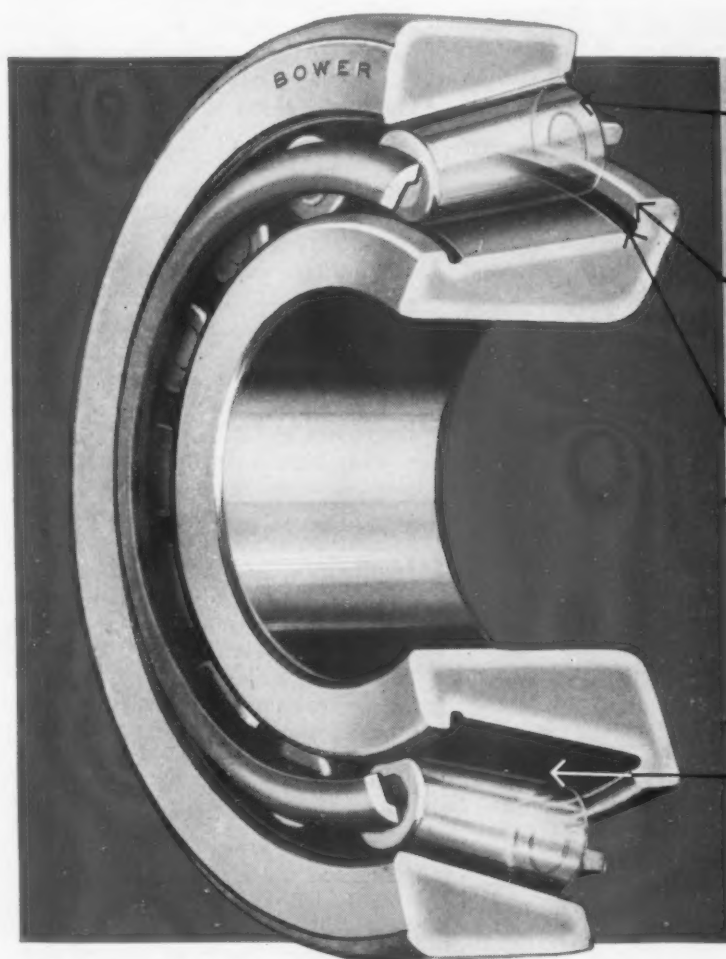
(Please turn to page 290)

Here's how BOWER Spher-o-honed design lengthens bearing life... cuts maintenance costs!

The Bower tapered roller bearing design features shown on this page are vitally important to every bearing user. For they illustrate the high quality, precision workmanship and close attention to engineering detail that go into *every* Bower bearing. Even more important, these Bower design features will give you significant bearing advantages such as reduced wear, longer

bearing life and lower maintenance requirements. They've been thoroughly *proved* by extensive use in virtually every type of bearing application. If your product uses bearings—whatever it may be—specify Bower now. Or better yet, call in a Bower engineer while your product is still in the blueprint stage.

BOWER ROLLER BEARING COMPANY • DETROIT 14, MICHIGAN



● **SPHERICAL ROLLER HEADS ARE GENERATED TO THE CONTOUR THEY ACQUIRE IN THE COURSE OF WEAR.** This helps Bower bearings hold adjustment and pre-load longer and better. Normal running-in time is virtually eliminated.

● **HIGHER FLANGE PROVIDES A LARGE, TWO-ZONE CONTACT FOR ROLLER HEADS,** thereby reducing unit pressure. This exclusive Bower feature improves roller alignment, greatly reduces wear and practically eliminates resultant "end play."

● **LARGER OIL GROOVE GIVES POSITIVE LUBRICATION** at the critical point—where the roller head thrusts itself against the cone flange. Here Bower design provides a larger recess that holds a generous supply of lubricant—increasing efficiency and decreasing wear.

● **PRECISION RACES PROVIDE QUIETER, SMOOTHER OPERATION.** A Bower-developed grinding and honing process provides a micro-smooth surface of hard, crystalline base metal. In this way, close-tolerance precision is built-in to stay! No final adjustment is needed!

A COMPLETE LINE OF
TAPERED, STRAIGHT AND
JOURNAL ROLLER
BEARINGS FOR EVERY
FIELD OF TRANSPORTATION
AND INDUSTRY

BOWER

ROLLER BEARINGS



For More Information Circle No. 311 on Inquiry Card—Page 17

IT'S NEW!



MILLERS FALLS PORTABLE SHEAR

**Newest addition to
MILLERS FALLS famous line
of cost-cutting tools
for industry**

This rugged, high-production tool cuts sheet metal — up to 16 gauge (.060") in steel and galvanized sheet — up to 50% greater in aluminum, copper and other non-ferrous metals. Blade adjustments for different jobs are quickly made — with hex keys conveniently located in tool handle.

In power, in quality, in design, the new No. 16 Portable Electric Shear is an outstanding addition to Millers Falls line of electric tools for production and maintenance . . . including drills, high-speed die grinders, heavy-duty grinders, saws, hammers, sanders, polishers, screw drivers and nut runners.

Compare the features

Write for free literature on the new Millers Falls Shear, on Millers Falls complete selection of high-performance, advanced-design electric tools. Demonstrations will be quickly arranged on request.

MILLERS FALLS COMPANY
Dept. PR-4, Greenfield, Mass.



On straight lines or curves, from inside or outside, Millers Falls new No. 16 Portable Electric Shear cuts clean and fast. Light weight — only 8 lbs. Minimum radius for left hand cuts is 1/2", for right hand cuts, 1 1/4". High cutting-line visibility. Precision-ground, heat-treated alloy steel blades are quickly removed for resharpening. Built to Millers Falls quality standards, the No. 16 Portable Electric Shear is the latest star in a notable line of industrial electric tools.



The Mark of Superiority

Recent Court Decisions

(Continued from page 288)

appliance company within the state of Utah. The court said:

"Plaintiff (Servel) seeks support in the statement that an employee of Servel has serviced defendant's products in the State of Utah on many and numerous occasions. This matter would not be controlling for reasons: (1) The court was not obliged to so find because of the evidence that the regional service manager had no such duty and does not perform such services."

In other words, Servel's regional service manager performed services in Utah, which services ordinarily would have been sufficient evidence to justify a court to decide that Servel was doing business in Utah. However, as the regional service manager had no authority from Servel, his employer, to perform such services, the higher court held that Servel was not responsible for his acts, performed in the State of Utah. Hence, Servel could not be sued by the appliance company on the basis that it was "doing business" or transacting intrastate business in Utah.

Quite obviously, under the same circumstances Servel would not have been liable on promises, guarantees, contracts and the like made by the employee, because he was not authorized to thus represent his employer.

This higher court also explained that the mere presence in Utah of an officer of a foreign corporation will not result in the corporation transacting intrastate business. Neither do the aiding of the distributor in his duties of promoting sales and servicing activities of independent dealers through instructing or training them and their employees, nor the giving of a warranty and the shipping of merchandise to an independent dealer, constitute interstate acts.

**Want more Facts on any of the
products shown in this issue?**

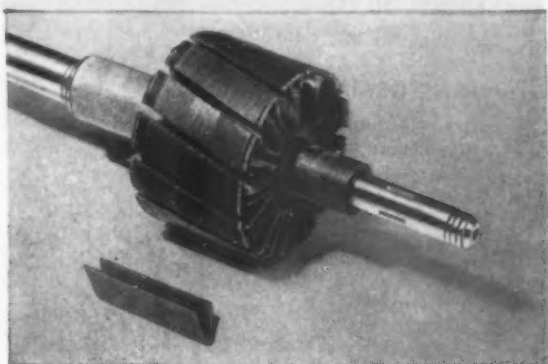
**Get them quickly and easily
by using the
INQUIRY CARD
PAGE 17**



Smooth finish retention makes Taylor Bobbin Fibre ideal for textile bobbins. High impact strength and easy machining add to its value.



Flexibility gives long life to abrasive discs backed with Taylor Vulcanized Fibre, which retains strength under repeated bendings.



Toughness of Taylor Vulcanized Fibre slot wedges protects motor windings... gives dependable electrical insulation.

Also available from Taylor—

- .. a varied line of high-quality laminated plastics, including phenol, melamine, silicone, epoxy and combination laminates... and polyester glass rods.
- .. complete fabrication service, on an economical, prompt-delivery basis, for your vulcanized fibre or laminated plastic parts.

Your new designs can profit with Taylor Vulcanized Fibre

When you're looking for a material to fill a tough assignment... in your new designs or in present products... don't overlook the many unique qualities of Taylor Vulcanized Fibre. It offers a combination of physical characteristics, electrical properties and economic advantages that you may find add up to the best answer for your product.

It's tough, flexible and strong. It withstands impact, resists wear and abrasion... and is a good electrical insulator. And it's exceptionally economical to machine... cuts, drills and bends readily. It comes in sheets paper-thin to several inches thick... rolls... strips... rods... and in a variety of colors. A wide selection of grades probably includes a type that exactly meets the requirements of your particular application.

Taylor specialists will be glad to help you apply Taylor Vulcanized Fibre in your production. Or, you may find it pays to have Taylor's Fabricating Division furnish the completed part to your specifications.

TAYLOR FIBRE CO. Plants in Norristown, Pa., and La Verne, Calif.

Branch offices in Atlanta; Boston; Chicago; Cleveland; Dayton; Detroit; Indianapolis; Los Angeles; Milwaukee; New York City; Philadelphia; Rochester; San Francisco; St. Louis; and Tolland, Connecticut. Distributors in Grand Prairie and Houston, Texas; Jacksonville, Florida; New Orleans, Louisiana; and Toronto, Ontario.

TAYLOR
Laminated Plastics
Vulcanized Fibre

Since 1869

The

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FABRICATING DIVISION

MILL DIVISION



85 years of experience in forming and drawing metals, with very diversified machine facilities, is at your service. Our brand new fabricating plant is one of the most modern in New England. Our engineering and development staff will be happy to study your problem and assist you in cost reduction of drawn or fabricated metal parts. Quality is our foremost consideration.

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We work in Brass, Copper, Bronze, Steel, Aluminum, Monel, Zinc, and other metals and alloys. We specialize in stampings, drawn and headed parts of a wide variety, Pen Caps, Rivets, Ferrules, Washers, Eyelets, etc. Our facilities are extensive. We invite your parts, prints or problems for expert analysis and recommendation.

STOCK ITEMS

Pins, Grommets and Washers, Oil Lamp Burners, Colonial and Novelty Oil Lamps, Curtain Rings.

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For table, floor or pin-up. Galleries, Shade Holders, Slip Rings, Reflectors, Collars, Clusters, Adapters, Breaks, and over 100 more.

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Lipstick Containers, Bottle and Jar Caps, Mirror Frames, Rouge & Powder Boxes.

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Adequately equipped for production quantities.

Plume & Atwood has been a dependable source for brass and copper alloys since 1869. Sheet, strip — mill coils or cut to length — all are New England quality in the highest tradition.

Make

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your source for

BRASS, COMMERCIAL BRONZE, PHOSPHOR BRONZE, NICKEL SILVER

All alloys; widths to 16"; close tolerances.

P&A SUPERFINE GRAIN DRAWING BRASS

Exceptionally fine grain structure, yet draws easily. P&A's superior, hard surface comes bright from the die, requiring only a finish polish to bring out the lustre. Can save up to 50% of finishing cost.

"PANDA" BRONZE

Economical, P & A special bronze for spring applications.

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Endorsed by the jewelry trade for generations.

THE PLUME & ATWOOD MFG. CO.

FABRICATING DIVISION
WATERBURY, CONN.

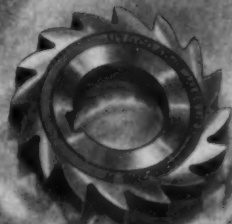
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U N I O N



Ever since the 17th century, for beauty of tone, form and craftsmanship, the violins of Antonio Stradivari have stood out as masterpieces.

Among all modern cutting tools, those produced by Union are outstanding in their uniform quality, precision and long life.



The "HALIR" violin from the collection of Frederick S. Haenel, Gaylordsville, Conn.

TWIST DRILLS
Straight Shank
Screw Machine
Taper Shank
Three & Four Groove
Heavy Duty
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Angle

HOBBS
Spur Gear
Stub Tooth
Involute Spline
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**METAL SLITTING
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Concave Sides
Formed Teeth
Side Chip Clearance

**INSERTED BLADE
CUTTERS**
Side Mills
End Mills
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**REAMERS
END MILLS
COUNTERSINKS
COUNTERBORES
CARBIDE TOOLS**

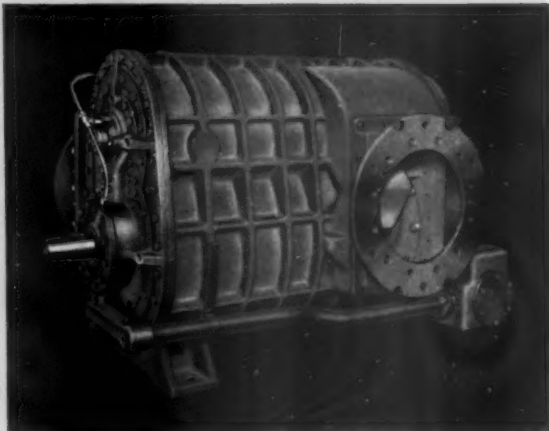
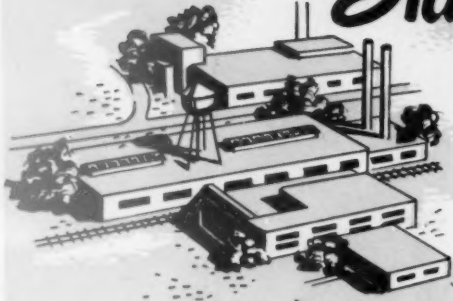
UNION TWIST DRILL COMPANY • ATHOL, MASSACHUSETTS

End Mills Milling Cutters Gear Cutters Twist Drills Hobbs Reamers Carbide Tools

OWNERS AND OPERATORS OF: S. W. CARD MANUFACTURING CO. DIVISION, Mansfield, Mass.

BUTTERFIELD DIVISION, Derby Line, Vermont and Rock Island, Quebec
CUT INVENTORY COSTS, ORDER FROM YOUR LOCAL DISTRIBUTOR

Standardaire® Blowers



*deliver
more air
in less
floor
space,
and
with less
noise*

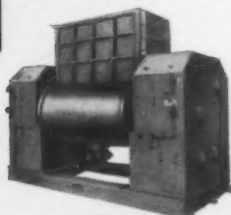
There is no need for heavy, reinforced flooring, foundations or piping anchors if you install a *Standardaire Blower*. The *Standardaire* handles a wide range of volume compression without pressure surges, and with an exceedingly low noise level.

The *Standardaire Blower* achieves its highly efficient operation by employing a proved principle of compressing air or gas on a modified adiabatic cycle. Compactly designed, the *Standardaire* moves more air with less wear, maintenance and power costs. Write today for Bulletin B-154.

READ STANDARD
CORPORATION

Read Standard also manufactures a complete line of chemical mixers for laboratory and industrial use. For further information write, Read Standard Corp., York, Pa.

BLOWER-STOKER DIVISION
370 Lexington Avenue
New York 17, New York



For More Information Circle No. 316 on Inquiry Card—Page 17

Stores Control

(Continued from page 89)

item of this sort reaches the order point, the Purchasing Agent processes a Construction and Repair Work Order, and regular procedure follows through receipt of the material. At the completion of each such job, the Accounting Department advises Purchasing the unit cost of the fabrication. This enables a check against bids of outside vendors for the item, so that economic selection of supply source can be made. Out-of-pocket costs, existing work load in the Construction and Repair Department, and industrial relations factors may have to be considered in arriving at a decision.

With this procedure in operation, we feel that we have accomplished our original objectives, having supplanted three separate clerical records and related procedures with one improved record and procedure at a substantial reduction in clerical cost.

Coordinated Procedures


In the course of this project, as is usually the case, related procedures had to be checked to be sure the new system would tie in properly and not disrupt the orderly flow of required information channeled out for other end purposes. As a consequence, possible improvements were spotted and followed through, with important by-product savings:

1. *Requisitioning Non-Stock Items.* Under the previous system, authorized personnel requiring non-stock material manually prepared a 3-part Stores Requisition, which was sent to Engineering for approval. Engineering forwarded it to the Storeroom, where the Storekeeper edited the request and prepared a 2-part Purchase Requisition to the Purchasing Department.

The Purchase Requisition was redesigned as a 3-part form, filled out directly by authorized requisitioning personnel. It is routed through Engineering as before, but is sent directly to Purchasing after approval. This has eliminated the use of one form and has resulted in a saving of at least one day in travel time and re-editing and typing over 6,000 requisitions a year.

2. *Closing Construction and Repair Orders.* Formerly, approved closing copy of Job Order form was sent to the Storeroom for detailed

(Please turn to page 298)



Chase Copper Alloy Wire

gives you these finer qualities...

Chase wire combines *high ductility* with *great tensile strength*. Result: excellent spring properties. Chase wire has great uniformity of set and temper. Result: it uncoils without time-wasting twists and tangles. Chase wire has precisely uniform gauge... texture... color... is free from physical defects. Next time *you* need wire, ask for the finest... call your Chase wholesaler or the nearest Chase warehouse.

Result: satisfaction!

Chase



BRASS & COPPER CO.

WATERBURY 20, CONNECTICUT • SUBSIDIARY OF KENNECOTT COPPER CORPORATION

CHASE NOW SELLS STAINLESS STEEL, TOO!

Write Today for Free Folder "Chase Cold-Heading Extruded Brass and Copper Alloy Wire."



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OCTOBER, 1954

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295

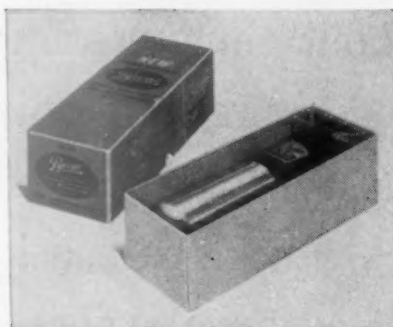
THE NEWEST, MOST UNUSUAL AND WORTHWHILE BUSINESS CHRISTMAS GIFT YOU COULD GIVE!

easy-to-use • highly efficient • refillable

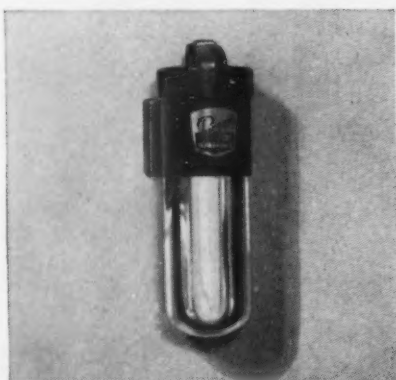
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PUSH-BUTTON FIRE EXTINGUISHER for home and automobile



Attractively boxed and ready for Christmas wrapping . . . individual corrugated reshipping carton will be furnished at slight extra cost.



Comes complete with attractive matching wall bracket. Easily mounted at any convenient location.

Here's a top quality business Christmas gift so different, so good-looking and so practical, that it'll be a reminder of your thoughtfulness to customers and friends for years. This item was acclaimed last year . . . the year of its introduction . . . the Grand Prize Winner of the National Home Safety Awards. Make it your business Christmas gift this year . . . persons receiving one will appreciate your thinking of their firesafety.

This full 1 pint capacity PYRENE Push-Button Fire Extinguisher actually costs less than the average business Christmas gift. Just the thing for kitchen, furnace, workshop or automobile . . . steady pressurized stream of PYRENE Liquid kills incipient gasoline, grease, electrical, rubbish and many other fires at the touch of a button.

For complete details, contact your local PYRENE representative or write us direct today, stating the quantity desired. You'll be more than pleased with this unique business Christmas gift.

**RETAILS AT \$7.95
WITH MOST ATTRACTIVE
QUANTITY PRICES**



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NEWARK 8 • NEW JERSEY

Sales and Service in the Principal Cities of United States and Canada
AFFILIATED WITH C-O-TWO FIRE EQUIPMENT COMPANY

For More Information Circle No. 318 on Inquiry Card—Page 17

American Felt Engineers can help you Reduce Costs... Improve Products

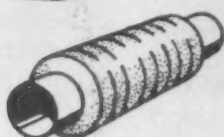


A glass-polishing plant had been purchasing felt discs 1½" thick. Changing to 2" at small extra cost effects appreciable economies. Increased disc life means longer runs without down-time for re-placements.



A popular household appliance originally had plain felt seals, held in place by complicated and expensive springs. Switching to Hycar-treated seals eliminated the springs, with consequent economy.

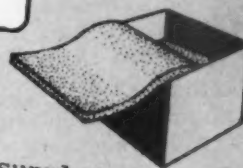
When you take advantage of the knowledge of your suppliers, as well as of their materials, you can often obtain cost-cutting advantages. Here are some recent examples of constructive collaboration between American Felt Company and its customers.



A large user of felt seals now receives them packed on cardboard tubes. The customer states this saves time in assembling.



A filter was re-designed to use fused edges, so that it could be delivered to the customer's plant ready for assembly without any processing whatever.



American was supplying felt strip in rolls. After examining the application, it was suggested that the felt be supplied in cartons, each containing 5,000 feet, the end brought out to the top of the carton, so one strip could be quickly joined to the end of the preceding one. Result: much time saved in replacing rolls.

Felt is an engineering material, available in many types. American's Engineering and Research Laboratory is ready to work with you in uncovering the most suitable and economical felt for your purposes. See the nearest Sales Office, or write direct.

American Felt Company

TRADE MARK



GENERAL OFFICES

74 GLENVILLE ROAD, GLENVILLE, CONN.

SALES OFFICES: New York, Boston, Chicago, Detroit, Cleveland, Rochester, Philadelphia, St. Louis, Atlanta, Dallas, San Francisco, Los Angeles, Portland, Seattle, Montreal.

PLANTS: Glenville, Conn.; Franklin, Mass.; Newburgh, N. Y.; Detroit, Mich.; Westerly, R. I. — ENGINEERING AND RESEARCH LABORATORIES: Glenville, Conn.

For More Information Circle No. 319 on Inquiry Card—Page 17



THE DIES ARE YOURS FREE!

Yes, we do hundreds of stamping jobs without making special tools—and there's a good reason for this. In stamping out laminated shims for over forty years, we've developed much special equipment and tooling unknown in the aver-

age stampings house... including an arsenal of blanking dies and punches...and we've acquired unusual production techniques and skills. This equipment and these special skills are at your service without charge.

ROCK-BOTTOM PRICES... BY THREE METHODS!

These three separate production techniques are judiciously applied to save you money on your stamping needs!

MACHINE CUT METHOD. Regardless of quantity, we have the method that fits your needs best! For half-a-dozen or a few hundred stampings, our *Machine Cut Method* produces the stampings at amazingly low cost.

SHORT RUN METHOD. As quantities increase, we shift to the *Short Run Method*, with stock tooling and temporary dies—such as the surprisingly low-priced Hecht-type die.

PRODUCTION METHOD. Or we shift to our *Production Method* using high speed self-feeding presses.



For full information, send for our free 12-page booklet "Service In Stampings." And next time you need stampings, why not let us bid—and discover the savings we offer you!

STAMPINGS DIVISION

"ONE PIECE OR ONE MILLION"

2410 UNION STREET • GLENBROOK, CONNECTICUT

For More Information Circle No. 320 on Inquiry Card—Page 17

Stores Control

(Continued from page 294)

cross-checking and posting to prevent a job being closed before all charges had been applied against it, which might occur when material for an emergency job is "borrowed" from another job or taken from the Foreman's emergency reserve supplies. We find the transaction simpler to handle by charging the replenishment material to the job on which it is used, rather than transfer the values between jobs and from expense. This operation also spotted job closing forms which failed to show, in the space provided, that non-stock material had been ordered against the job. This was important because if the job were closed in a month prior to the cost distribution of the invoice for the material, the job cost as shown on the monthly report would be in error, and reopening it for correction might be quite complicated where the cost is transferred to Capital Asset accounts. After segregation of the job closings—those with direct material charges and those without—the latter were processed through the Property Records Section to the Tabulating Department as official closings, and the former to the Invoice Section of Accounting, where an identical Job and Purchase Order Record was maintained. The Invoice Section checked again, and processed them only after the vendor's invoice was received and the charge made to the job.

Prior to the change in the form and distribution of the Purchase Requisition, the Invoice Section could not have spotted job closings which should have—but did not—show direct material ordered against them, because job numbers were shown only on Engineering Purchase Orders, and not on Supply Purchase Orders. Also, the copy of the Stores Requisition, which showed the job number, was held in the Storeroom until receipt of the material.

Under the new system, arrangements were made to show the name of the requisitioner on the Store-room copy of the Purchase Order, which was all the information they required if they no longer handled job closings. The Purchase Requisition copy then could accompany the Purchase Order copy to the Invoice Section, providing the latter with the necessary information to take

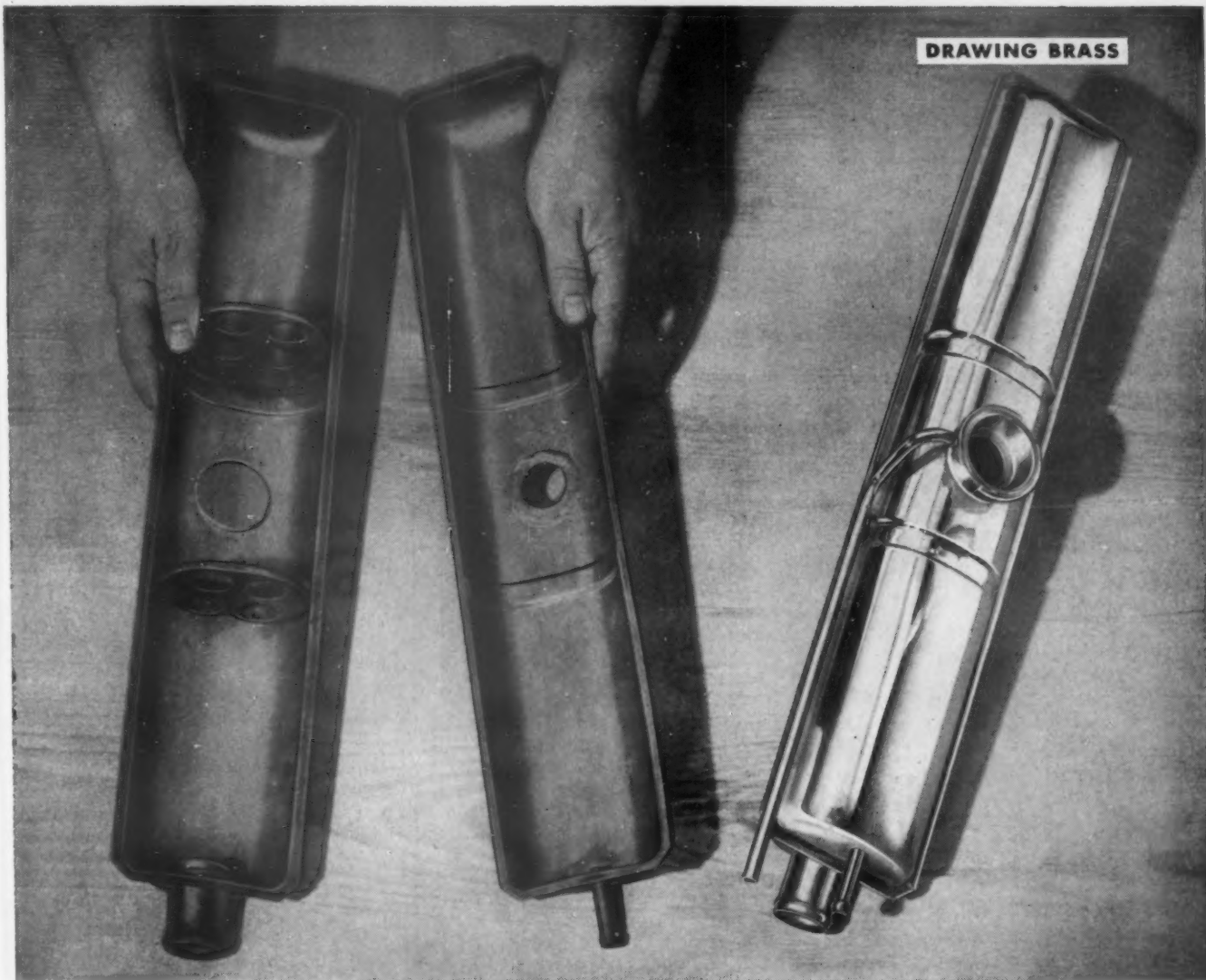
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IASING

DRAWING BRASS



RADIATOR TANK made of Formbrite shown before polishing and after chromium plating. Halves are assembled with a lock seam and soldered together with baffles inside. Intake spout, overflow tube and connecting fitting are also attached.

New fine-grain drawing brass cuts rejects from 13% to under 1%

These radiator tanks—used in a leading sports car—were first made of ordinary drawing brass.

But Morrison Steel Products Company, Buffalo, N. Y., found this brass wasn't stiff enough after forming. During handling, polishing and plating, many dents and nicks appeared on the surface. Rejects ran at about 13%.

Then Morrison turned to Formbrite* — Anaconda's new fine-grain drawing brass. Here's what happened.

1. Rejects dropped to less than 1%.
2. Appearance of the final plated tank (very important in a sports car) was so much improved that now Formbrite is specified for all these tanks.
3. Polishing costs were sliced almost in half.

WHY MORRISON FOUND FORMBRITE BETTER, CHEAPER TO USE

Formbrite has a superfine grain. Pro-

duced by special methods of rolling and annealing, this grain is so fine that often a simple color buff brings it to a bright, lustrous finish. (Compare magnification of Formbrite Drawing Brass with that of ordinary drawing brass. At right.)

Formbrite is harder, stiffer, springier and more scratch-resistant. It resists denting and deforming. Yet Formbrite is surprisingly ductile . . . readily stamped, formed, drawn and embossed. And Formbrite plates beautifully.

NO EXTRA COST

Premium price for this premium metal? Not at all. Formbrite costs not a penny more than ordinary drawing brass. It comes in sheets, strips and coils—in all commercial widths and gages.

FREE SAMPLE

The way to find out about Formbrite is to try it yourself. Ask for a sample

and more information. Just write to: *The American Brass Co., Waterbury 20, Conn. In Canada: Anaconda American Brass Ltd., New Toronto, Ont.*

*Reg. U. S. Pat. Off.

5487



75x magnification of ordinary drawing brass.



75x magnification of superfine-grain Formbrite.

Formbrite

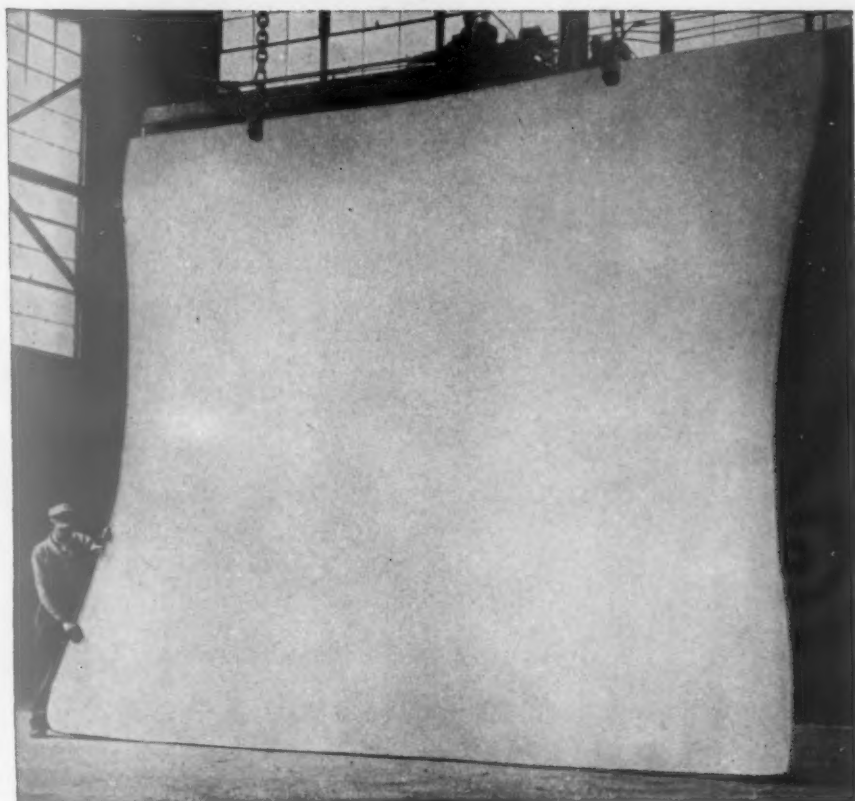
FINE-GRAIN DRAWING BRASS
an ANACONDA® product

Made by
THE AMERICAN BRASS COMPANY

For More Information Circle No. 321 on Inquiry Card—Page 17

OCTOBER, 1954

299



When Carlson says LARGE STAINLESS PLATE

IT IS
LARGE
PLATE

THIS type 304 Stainless Steel plate measures 203" x 168" x $\frac{1}{2}$ ". It is to be pattern cut to customer specification. Accuracy in cutting plates of this (or any) size is the result of a unique Carlson combination... skilled employees and specialized equipment.

Produced to chemical industry standards of quality, this plate, weighing 5,180 lbs., is a typical example of the ability of G. O. Carlson, Inc. to meet your needs in a wide variety of stainless analyses.

Remember too, that Carlson can supply you as readily with stainless forgings, tank heads, sheets (No. 1 Finish), bars, rings, ring blanks, flanges, etc. in any size, large or small. Also sketch plates cut to your specifications. Many small orders can be filled right out of stock.

G.O. CARLSON, INC.
Stainless Steels Exclusively
Plates • Plate Products • Forgings • Bars • Sheets (No. 1 Finish)

THORNDALE, PENNSYLVANIA

District Sales Offices in Principal Cities

For More Information Circle No. 322 on Inquiry Card—Page 17

Stores Control

(Continued from page 298)

over the job closing check completely and eliminating the Store-room from the procedure entirely.

3. *Combined Purchase and Receiving Form.* This project also prompted analysis of our receiving procedure and average cost policy, resulting in a combination of the receiving form with the Purchase Order to save a considerable amount of typing, and adoption of standard costs on stock supply items with additional clerical savings.

Devising and installing method changes of any significance requires complete understanding of the objectives and personnel involved. Workers' attitudes play a very important part. We at General Aniline feel that method improvement is a team proposition whereby a progressive management and cooperative personnel work together to accomplish the objectives with enthusiasm. Method improvements are real accomplishments, measurable in dollars and cents savings. Methods and procedure work at General Aniline, therefore, is a pleasant task.

1 1 1

Specify Shipping Methods

(Continued from page 119)

than in box cars, this was offset by his being able to load with a fork lift truck rather than by hand.

3. After the arrival of the slabs at our site, they would then be unloaded with a fork lift truck, moved from the siding to the building, then raised by fork lift truck to the roof at a spot near where they were to be installed. A representative of the lift truck company was called in to recommend the proper piece of equipment to do the job. After actual work was started, it was found that the operation required about ten minutes per skidload, or about one minute per slab from the car to the roof.

The operation is shown graphically in the accompanying series of photographs taken at the site.

It is realized that most site projects will not have a fork lift truck of this capacity available. However, they are readily available on a rental basis from most construction equipment companies.

Whatever the job...

automatic
washers



or
lock
washers



SELF-STICKING PERMACEL[®] TAPES

In our complete line, there's a self-sticking tape for every job...write Permacel Tape Corporation, New Brunswick, N. J.

For More Information Circle No. 323 on Inquiry Card—Page 17

OCTOBER, 1954

301

Complete SPROCKET FLEXIBILITY

Makes stock items out
of Specials
Ends Alterations
Cuts Replacement Costs

1 STOCK Grip-Master®
PLATE SPROCKET

Or reverse the process
and one stock hub fits
up to 75 different Grip-
master plate sprockets.

As simple as ABC—
just select any Gripmaster
sprocket and hub in the
bore size you need and
assemble on the shaft.

No need to rebores or remachine. Gripmaster
or bolt-on type, hub on one or both sides, each
sprocket is complete with standard keyway and
set screw.

What's more, replacement costs are kept way
down since only a plate sprocket is needed. Hubs
are easily reused.



In the smaller sizes Gripmaster
tapered bushings and "fixed-
bore" sprockets fill out the line
—offer the same advantages

FITS **4** KINDS OF
HUBS IN DIFFERENT BORE
SIZES



Write today for
Bulletin 184 which
describes the first
really ENGINEERED
approach to the
problem of supply-
ing all kinds of
sprockets "off-the-
shelf" . . .



66402

cullman
POWER TRANSMISSION
ROLLER CHAINS AND SPROCKETS

REPRESENTATIVES AND DISTRIBUTORS IN ALL PRINCIPAL CITIES
CULLMAN WHEEL COMPANY, 1342 ALTGELD STREET, CHICAGO 14, ILLINOIS

For More Information Circle No. 324 on Inquiry Card—Page 17

Import Purchasing

(Continued from page 82)

similar to (but often more inclusive than) Dun & Bradstreet reports and bank references on domestic firms.

If not already available in the files of the Bureau of Foreign Commerce, a specific request will result in investigation and preparation of such a report. The charge for a World Trade Directory report is \$1.00, whether already available or necessitating a special investigation. Requesting an investigation and preparation of such a report takes some time, but it can be expedited by cutting through Governmental red tape.

For example, we obtained a report on a Portuguese exporter of Oil of Eucalyptus in less than 7 weeks by initiating an air mail inquiry direct to the United States Ambassador in Lisbon, following up the inquiry, and, upon receiving advice that the report had been compiled and was on its way to Washington, ordering the report from the Bureau of Foreign Commerce, and requesting Congressman Durham to check with the Bureau to expedite its handling. Just 8 days after the information was forwarded from Lisbon to Washington, the report was in the mail to Greensboro.

1 1 1

Separating, Lifting Steel Sheets by Air



A vacuum actuated rubber cup enables a sheet lifter to separate and move sheets of steel easily and safely. Vacuum of 22" of mercury is produced by passing compressed air through a venturi at 45 psi. It is conveyed to the rubber cup through passages in the handle. As long as the trigger is held down on the sheet lifter, the cup can pull 11 psi. The lifter is a product of F. J. Littell Machine Co., 4555 Ravenswood Ave., Chicago 40, Ill.

MicroRold® THINNESS CONTROL



can
**Increase
Profits!**

“Thinness Control” means that the decimal thickness of each sheet is uniform throughout the length and width.

Job costs are figured on a square foot basis while stainless steel is purchased on a weight basis. When stainless steel is ordered by gauge number the permissible A.I.S.I. thickness variation is plus or minus 10%. If you receive material on the heavy side of the gauge range you are paying a premium for stainless surface area. For example, if you order 18 gauge, you may receive sheets .052" thick, when a thickness of .0475" would suit your purpose. On a standard 18 gauge sheet (36"x120") each

.001" in thickness weighs 1.26 pounds per sheet. In this example, each stainless sheet could weigh as much as 5.67 pounds more than required. You can readily see the advantages of specifying stainless rolled to the light side of the gauge range. MicroRold stainless is rolled to exceptionally close tolerances, as low as 3% average (plus or minus). Regular use of MicroRold provides more stainless area per ton or the equivalent area with lesser weight.

If you are not now a user of MicroRold sheet it will pay you to get the full details. Your steel distributor will gladly tell you the MicroRold story.



Washington Steel Corporation

WASHINGTON

PENNSYLVANIA

For More Information Circle No. 325 on Inquiry Card—Page 17

Only
MOBILIFT
 gives you *Mobil-Matic Drive**
 with **HYDRA-LIZER***

Model Shown,
 New M-324
 with 83" Mast



**More Operational
 and Service Features**

- Easy to get on and off from either side.
- Spring mounted rear wheels for riding comfort.
- Combination ball bearing worm and nut type steering.
- One-piece hinged hood for easy access to engine compartment.

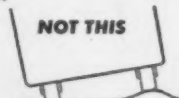
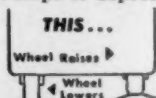
AND MANY OTHERS

*** MOBIL-MATIC DRIVE**

Fluid coupling, oil-immersed clutch, constant mesh transmission — a combination that transmits power smoothly and efficiently with minimum wear and service. There is **NO CLUTCH PEDAL** — just **ONE** push-pull forward and reverse lever!

*** HYDRA-LIZER**

Another Mobilift exclusive... equalizers mounted on each rear wheel and connected hydraulically to cross compensate the truck when the front or rear wheels pass over bumps or depressions.



**LAMSON
 MOBILIFT CORP.**
 Home Office: Portland, Ore.
 Offices in principal cities

LAMSON MOBILIFT CORP.
 610 Lamson St., Syracuse 1, N. Y.
 Please send complete information on ☐ 3000- and ☐ 4000-lb. capacity units to:

Name _____ Title _____
 Company _____
 Address _____
 City _____ Zone _____ State _____ 1206

**President's Cabinet to
 Study Energy Needs**

President Eisenhower has appointed a "Cabinet Committee on Energy Supplies and Resources Policy" to study the "continued development of energy supplies and resources, and fuels." The committee will review all factors relating to the needs and supplies of major sources of energy, including anthracite, bituminous and lignite coal, as well as coke, coal tars, synthetic liquid fuels, petroleum and natural gas. It is to report its recommendations to the President not later than December 1, 1954.

Asked why water power resources were not included, the White House said there is already a Cabinet committee covering that. It was also pointed out that the Government has separate groups now looking into ways of "helping" the hard and soft coal industries. The committee is composed of the heads of the Departments of State, Defense, Justice, Interior, Commerce, and Labor, and Defense Mobilization Director Flemming.

A White House announcement of the formation of the Cabinet Committee said: "The defense of the nation in wartime and the continued expansion of the United States economy in peacetime require an abundant supply of energy. The industrial progress of the United States has been marked by rapidly increasing annual and per capita utilization of energy resources."

"At the direction of the President, the committee will undertake a study to evaluate all factors pertaining to the continued development of energy supplies and resources and fuels in the United States, with the aim of strengthening the national defense, providing orderly industrial growth, and assuring supplies for our expanding national economy and for any future emergency."

**Plastics Engineering Handbook
 Announced by SPI**

A Plastics Engineering Handbook has been announced by The Society of the Plastics Industry, Inc. This is the second edition of this technical book to be issued by SPI.

Three years in preparation, the twenty chapters have been prepared by over 200 Engineers, technicians, and other authorities in the

(Please turn to page 308)



DODGE TORQUE-ARM SPEED REDUCER

Costs less - Delivers more!

Savings up to 33% . . . efficiency up to 97% . . . are yours with this new and better kind of speed reducer. Proved in tens of thousands of installations, in all types of industry!

This reducer is mounted directly on the driven shaft. No foundation, no flexible couplings, no sliding base required. No lining up difficulties. The torque-arm, fastened to any fixed object, anchors the reducer. Unit is driven through any V-belt drive. Stock Taper-Lock Sheaves prescribed for each job. Tri-Matic Overload Release and Backstop are available if desired.

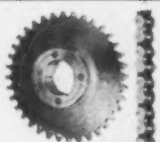
Torque-Arm Speed Reducers are sold from

Distributor's stocks—in single reduction and double reduction series—with capacities from 1 to 43 hp and output speeds from 12 to 330 rpm. Standardize on this modern idea in speed reduction—it saves you money.

DODGE MANUFACTURING CORPORATION, 1300 Union St., Mishawaka, Ind.

DODGE

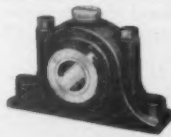
of Mishawaka, Ind.



TAPER-LOCK SPROCKETS
AND DODGE ROLLER CHAIN



TAPER-LOCK SHEAVES



DODGE-TIMKEN
PILLOW BLOCKS

Call the *Transmissioneer*, your local Dodge Distributor. Factory trained by Dodge, he can give you valuable assistance on new, cost-saving methods. Look for his name under "Power Transmission Machinery" in your classified telephone directory, or write us.





**has started a
Revolution in Bulk Materials
Handling, Shipping and
Storing!**



BULK SHIPPING of materials is now safe in uncovered trucks, cars or barges. You save on lower transportation and insurance rates. For return, SEALD-BINS fold to 1/10 size.



BULK STORING in U. S. SEALD-BINS requires no warehousing space, either before shipping or while awaiting use. Contents are safe in open storage.

Here is an entirely new concept of bulk handling, bulk shipping and bulk storing of flowable solid materials. For here is *low cost* combined with *complete protection* to the lading—from production to final use—all in the same bulk container!

We call this "closed" materials handling method the U. S. SEALD-BULK System. The unique and thoroughly patented collapsible container that makes it possible is the U. S. SEALD-BIN.

Built of synthetic rubber and fabric, similar to a tire, the U. S. SEALD-BIN is tough, non-corrosive, vermin-proof, moisture-proof and tamper-proof. It is engineered

for handling by means of a top lift eye from which a patented internal cable assembly extends the load-carrying support to the bottom. Both the large 300 cu. ft. (4 to 12 tons capacity, depending on weight per cu. ft. of the lading) and the smaller 70 cu. ft. (1 to 5 tons capacity) SEALD-BINS are inflated after filling—either with air or, in the case of oxygen-sensitive lading, with an inert gas.

The U. S. SEALD-BULK System provides totally new opportunities to cut costs of packaging and shipping, reduce man-hours, and eliminate warehousing and loss of materials. For the complete savings story, write or phone for an illustrated descriptive booklet.



BULK HANDLING of 300 cu. ft. of flowable solids at one time takes a man and a standard lift truck only a few minutes.



**UNITED STATES
RUBBER COMPANY**
CONTAINER PRODUCTS DIVISION
Providence, R. I.

For More Information Circle No. 328 on Inquiry Card—Page 17



Forming the above Special Phillips Truss Head in two blows presented a difficult upsetting task. This was successfully accomplished when the manufacturer specified Keystone "Special Processed" Cold Heading Wire.

The uniform grain flow properties of "Special Processed" Wire provided the desired upsetting and die forming qualities necessary to form the thin head section without distortion or cracking. The structural soundness and uniformity of "Special Processed" Wire further proved itself by trouble-free machine operation, longer die life and a finished product of the highest quality.

Next time you have a difficult cold heading job, try "Special Processed" Wire. See your Keystone representative or write for more information.

Keystone Steel & Wire Company
Peoria 7, Illinois
Industrial Wire Specialists

(Continued from page 304)

various branches of the plastics industry who have worked on the 23 different Handbook committees of the Society.

This Handbook is in one volume, of approximately 850 pages, containing over 500 illustrations, diagrams, charts, tables and three special fold-out inserts. The information in it covers design, materials, processes, equipment, finishing, assembly, testing and standards of plastics and plastics products.

The Plastics Engineering Handbook is published by the Reinhold Publishing Corporation 430 Park Avenue, New York 22, New York and is available at booksellers or direct at \$15.00 per copy.

1 1 1

Industry Report Finds "Enough Copper for All Needs"

The first of a new series of quarterly reviews of the copper industry issued by the Copper Division, Business and Defense Services Administration, indicates that the red metal "is fortunately in ample supply to meet any foreseeable demand."

According to Mr. William A. Meissner, Jr., Deputy Director of the Copper Division of BDSA, all three sources of domestic supply are improving: "Mine production, net imports, and scrap all show promise of substantial increases in both the short and the long term views," he said.

The first quarterly survey deals mainly with prospective copper supplies during 1954. Tables and charts were compiled from data supplied by the Bureau of the Census, Department of Commerce, Bureau of Mines, Department of the Interior and other sources. A future publication will deal with long range expectations. Other surveys, currently being made by the Copper and Brass Research Association, will supplement the BDSA quarterly reports.

One of the purposes of the report, said Mr. Meissner, is to offer an acceptable reconciliation for the data emanating from various sources. These, while individually accurate, employ definitions which produce results best suited to their own particular purposes—hence frequently seem to contradict each other. Since copper is a basic material essential to the nation's economy for its many special qualities, the quarterly reports are expected to fulfill an important need.

IT PAYS TO USE THE BEST

buy

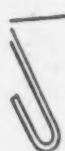
OXWELD

Trade-Mark

WELDING SUPPLIES



OXWELD rods, fluxes, and accessories will consistently give superior performance in any welding shop. For they are backed by LINDE's 45 years of research, development, and practical experience in oxy-acetylene welding and cutting processes. Always look for the OXWELD brand. It is your assurance of getting highest quality products.



Free!

"Helpful Facts About OXWELD
Welding Rods and Supplies"



Get your copy of this 32-page booklet from your LINDE jobber today. Or write to LINDE AIR PRODUCTS COMPANY, a Division of Union Carbide and Carbon Corporation, 30 E. 42nd St., New York 17, N. Y. In Canada: Dominion Oxygen Company, Limited, Toronto.

GET IT FROM YOUR LINDE jobber

The terms "Linde" and "Oxweld" are registered trademarks of Union Carbide and Carbon Corporation.

OXWELD RODS

are manufactured under rigidly controlled conditions to give top performance in any welding shop. Only five types of OXWELD rods are necessary for all average welding jobs.



OXWELD FLUXES

make it easy for you to get high quality welds every time. They provide a chemically clean surface and assure thorough fusion of rod and base metal during welding.



OXWELD GOGGLES

are built to give maximum eye protection with excellent visibility free from eyestrain and fatigue. Three shades of lens coloring are available to meet individual needs.



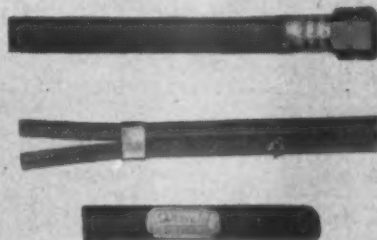
OXWELD GLOVES

furnish full protection for wrists and forearms as well as hands. Made of tough, flame-resistant suede leather, they are unusually soft and comfortable.



OXWELD HOSE

is available in single and double styles and in fitted lengths. It is light, durable, flexible, and practically immune to deterioration from sun and weather.



OXWELD

Friction Lighters

Tip Cleaners

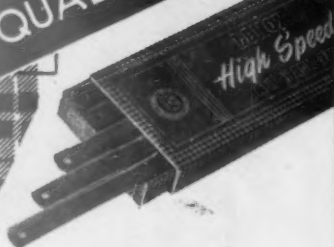
Wire Brushes

for efficient welding and cutting operations.



LENOX

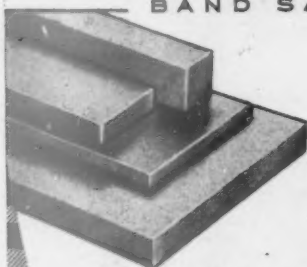
QUALITY TOOLS



HACK SAWS



BAND SAWS



GROUND FLAT STOCK



HOLE SAWS



The Tools in the Plaid Box

**AMERICAN SAW
& MFG. COMPANY**
SPRINGFIELD, MASS.

For More Information Circle No. 331
on Inquiry Card—Page 17

Carborundum Metals Offers "Facts on Zirconium" Booklet

"Facts About Zirconium", a concise compilation of information about the history and production of zirconium is available from Carborundum Metals Company, Inc., Akron, New York.

The Carborundum Metals Company was organized for the dual purpose of supplying the Atomic Energy Commission and industry with zirconium metal suitable for specific applications. In addition to its A.E.C. commitments, it is now producing zirconium metal and other related products for commercial applications.

The booklet discusses mechanical and physical properties, chemical properties, and facts about fabrication of zirconium, including melting, forging, rolling, welding, and machinability.

1 1 1

Plastic Pipe Sold On Basis of Pressure Ratings

"PressuRated" plastic pipe, introduced by The Yardley Plastics Co., Columbus, O., is said to end guesswork in the selection of pipe and eliminate the possibility of costly replacements.

Heretofore, Yardley says, plastic pipe was made in metal pipe wall thicknesses with no uniformity of pressure specifications. One size might be rated at 100 lb. working pressure while another was rated at 30 lb. The customer had no way of knowing which was which.

The new pipe ends guesswork. The user determines the job to be done, then selects the pipe. The new piping is made with pressure ratings of 75 lb., 100 lb. and 125 lb. in sizes 1/2" through 2". The specified working pressure is the same in all sizes.

1 1 1

Publish New Information on Leasing Automotive Equipment

"Fleet Transportation Costs Can Be Reduced" is the title of a booklet describing a new system of equipment trust fleet leasing. The program, developed by Lee Fleet Management, Inc., is said to give the lessee all the advantages to be had through leasing automotive equipment while retaining the low-cost features of company ownership. Copies are available from Lee at the Keith Building, Cleveland 15, Ohio.

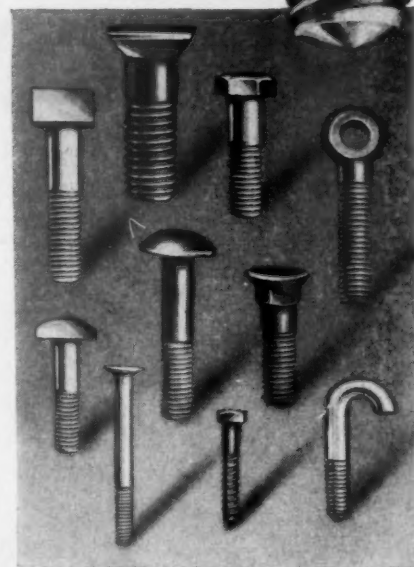
Threaded Specialties

lower cost
EYE BOLTS
by an
exclusive method

Among Pawtucket's many specialty products are these lower-cost eye bolts or "swing" bolts. Pawtucket's exclusive production method keeps cost low, dimensional accuracy unusually high and strength above standard.

Pawtucket eye bolts are made in standard sizes 1/4" and larger, or to your specifications. In any size, you can depend on uniform Class 3 fit, if required.

All standard steels,
stainless steels and
non-ferrous metals, including
Titanium



BETTER BOLTS SINCE 1882

PAWTUCKET

MANUFACTURING COMPANY

327 Pine St. • Pawtucket, R. I.
THE PLACE TO SOLVE YOUR BOLT PROBLEMS
T.M. REG.

"The Bolt Man"

For More Information Circle No. 332
on Inquiry Card—Page 17

For More Information Circle No. 333
on Inquiry Card—Page 17→

THIS RUNDEL-BUILT VARIABLE VOLTAGE CONTROL PANEL is designed for controlling three motors, each with five selective speeds. Major components include Ward Leonard A-C and D-C contactors, starters, relays and resistors.

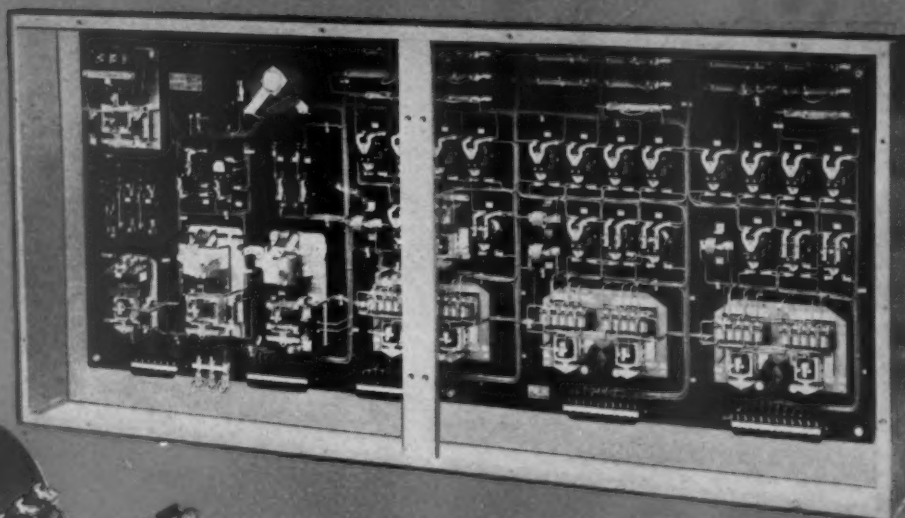


Photo courtesy Rundel Electric Co., San Francisco, Calif.



It's here... one-stop shopping FOR control components

Whether you're building, buying, or using controls, you'll find every A.C. or D.C. component you need at Ward Leonard.

That includes components for automation control, processing machinery, variable voltage speed control (Ward Leonard System of Control), machine tool control, conveyor system, air conditioning and other controls.

Here's what one-stop shopping at Ward Leonard gives you:

- Coordinated design gives matched performance between components.
- Quality-controlled manufacture assures uniformly excellent performance of each component.
- Broad selection cuts shopping headaches, time, costs.
- Ward Leonard design minimizes required panel size.
- Ward Leonard design simplifies engineering requirements.
- See back of page for extreme versatility of W.L. components.

A Ward Leonard engineer will be glad to show you our complete line of coordinated components for your control application. Or write for control catalog to Ward Leonard Electric Co., 600 South St., Mount Vernon, New York.

5 major control components make W. L. line complete

1. A.C. and D.C. CONTACTORS — solenoid type, multi-pole, wide range of accessories.
2. A.C. and D.C. MAGNETIC RELAYS — standard and specialty types like vibrating field, field loss, anti-plugging, etc.
3. A.C. STARTERS — Manual and magnetic, full or reduced voltage, single- or multi-speed.
4. RHEOSTATS — Ring, plate and face plate types, manual or motor driven.
5. RESISTORS — Low, medium or high current for control circuit, motor starting, etc.



**WARD LEONARD
ELECTRIC COMPANY**
MOUNT VERNON, NEW YORK



RHEOSTATS



RESISTORS



RELAYS



MOTOR CONTROLS



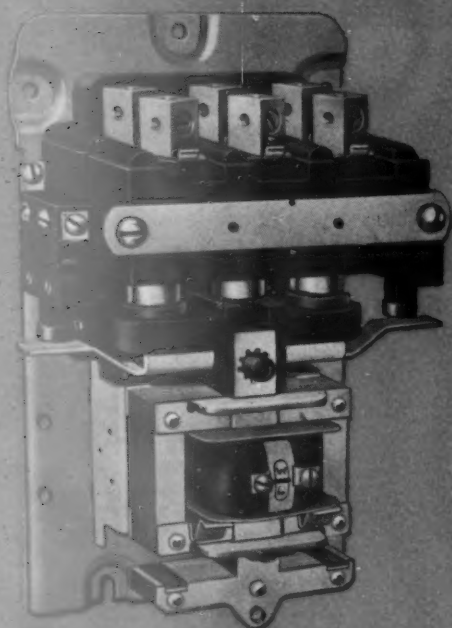
DIMMERS



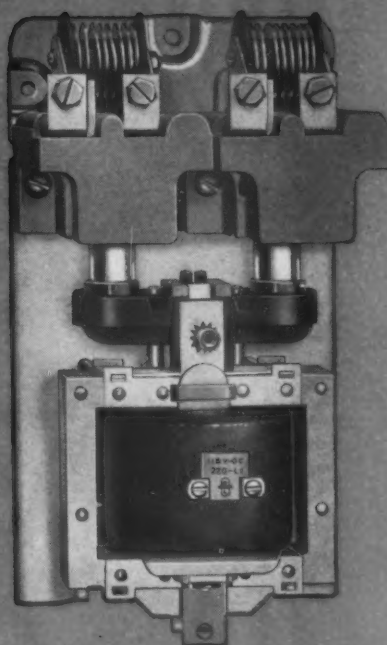
CHEMASTER

Result-Engineered Controls Since 1892

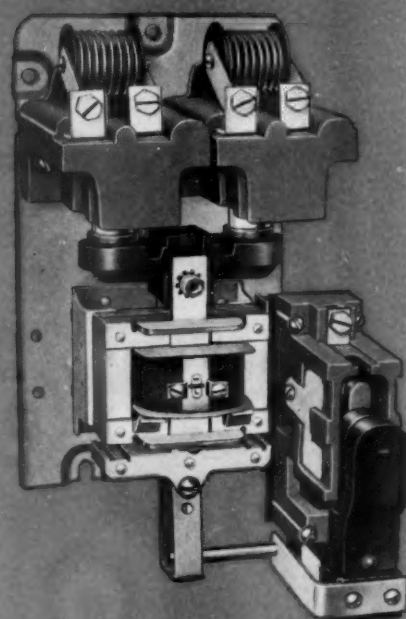
1 contactor... 3 basic models... 6 major variations... 1000 combinations



Size 2 A.C. contactor.



Size 2 D.C. contactor.



Size 2 D.C. with A.C. power plant and dynamic brake.

Here's what's available from the three basic models illustrated above:

1. Size 2 A.C. solenoid contactor
2. Size 2 A.C. starter
3. Size 2 A.C. solenoid contactor with D.C. power plant*
4. Size 2 D.C. solenoid contactor
5. Size 2 D.C. solenoid contactor with A.C. power plant
6. Contactors above with left- or right-hand integral dynamic brake**
7. Contactors above with: a) base mounted auxiliaries, b) side mounted auxiliaries, c) base mounted low power auxiliaries (precious metal for electronic circuits).
8. Contactors above with mechanical interlocks, either horizontal or vertical types.
9. The size 3 D.C. solenoid contactor (single pole, with or without dynamic brake) has same mounting base plate as the Size 2.

* Equipped with continuous duty D.C. coils.

** D.B. contact can be used as a normally closed power contact.

Here's why you save time and money when you use Ward Leonard contactors in building your controls:

- **Minimum stock** is all you need, thanks to unmatched versatility of Ward Leonard controls.
- **Less panel space** is needed with W.L. designs.
- **Lower assembly costs** with W.L. steel based units (for D.C. too) to eliminate expensive insulating panels.
- **Less layout and drafting time** is required.
- **All D.C. coils are continuous-duty type.**
- **Fewer renewal parts** are needed.

Write for control catalog to Ward Leonard Electric Co., 600 South St., Mount Vernon, New York.

4.9



**WARD LEONARD
ELECTRIC COMPANY**
MOUNT VERNON, NEW YORK



RHEOSTATE



RESISTORS



RELAYS



MOTOR CONTROLS



DIMMERS



CHONMASTER

Result-Engineered Controls Since 1892

BUY UDYLITE'S LONG EXPERIENCE IN **GET** BARREL PLATING APPLICATIONS THE EQUIPMENT THAT IS TAILORED TO YOUR SHOP PRODUCTION



Since 1936 when Udylite introduced the first standardized plating barrel with interchangeable parts, it has been on the move through research, engineering and production.

Through these 18 years the Udylite Barrel Plater has progressed with hard rubber, bakelite, melamine and lucite and now the latest development, Tempron. Over 8,000 barrels have been put into customer use.

Each new material, every new engineering detail and every planned operation in this never ending parade of progress has been long studied and operation tested for months before offering to industry.

All Udylite Barrel Equipment is engineered,

manufactured and customer plant planned in complete coordination with Udylite Electrical Engineers and Laboratory Technicians.

Regardless of the size of the installation or the equipment involved, Udylite experience and coordinated know-how are always the plus values of incalculable worth—and they are free.

You owe it to yourself—when you have small parts plating problems—to consult Udylite.

*Write for Bill Jackson's article
"Horizontal Plating Barrels and
Auxiliary Equipment."*

THE
Udylite
CORPORATION
DETROIT 11, MICHIGAN

**WORLD'S LARGEST
PLATING SUPPLIER**

AGAIN . . .
THE ONE AND ONLY
ADAMANT
FIRE BRICK CEMENT
BEING USED WITH
ADAMANT HIGH HEAT
DUTY BRICK ON
A COMPLETE RE-BRICKING
JOB FOR A MAJOR
PUBLIC UTILITY COMPANY



. . . impartial tests prove that the bonding strength of ADAMANT rises from 800 lbs. p.s.i. at room temperature to 1270 pounds at 2600°F.—Actually, ADAMANT is as strong as the brick it bonds. Its strong, gas-tight, metal-tight joints will not shake loose from vibration . . . effectively resist the abrasive action of dust-laden air . . . maintain their bond throughout the temperature range . . . and set without shrinking or cracking. Write or call us for literature and dealer's name.

ADAMANT—ready - mixed and easy to use—available in air-tight drums of 100, 250, and 500 lbs. capacity.

ADAMANT BRICK—exceptional quality, manufactured under exacting control methods—DRY PRESSED for density, TUNNEL KILN burned for uniformity of shape, hardness. Meets A.S.T.M. specification for High Duty Brick.

BOTFIELD

REFRACTORIES CO.

789 Swanson Street, Philadelphia 47, Pa.

For More Information Circle No. 335
on Inquiry Card—Page 17

Call Chicago Ass'n Business Survey Report "One of the Brightest in a Long Time"

Reports from purchasing agents in the Chicago District indicate a general strengthening in business. Summing up results of the latest Business Survey Report of the Purchasing Agents Association of Chicago, committee chairman Richard B. Berry says "the Business Survey Committee feels that the report this month is one of the brightest on which it has been able to report for some time."

Here are some of the highlights of the report:

Vendor Performance

Deliveries Made by Vendors: Deliveries are still following the trend toward stabilizing; a pattern that we have seen established over the past months.

Prices Paid for Principal Items You Buy: The flurry of higher prices that we encountered last month is repeated in August. This is probably due to normal lags that occur in passing along price increases.

Status of Business

Inventories of Principal Items You Buy for Production and Resale: Last month it appeared that a pivotal point of inventory policy might have been reached, but this month's report does not bear this out as inventories dropped lower.

Number of Employees in Your Company: This is the brightest picture we have seen in employment in many months with both an increase in those reporting more employees and a substantial decrease in those reporting fewer.

Production: Along with other bright spots in the report we find

an increase in production. Last month one-third reported production lower, but this month only one-fifth made this statement.

Your Backlog of Orders for the Products Your Company Sells: The refreshing note in the backlog of orders position indicated last month is accented this month by a 10% reduction in those reporting lower backlogs.

Buying Policy

How Far in Advance Must You Buy in Order to Have Principal Materials on Hand When Needed: The short term buying policy which has prevailed for some months continues with slight variation.

Special Question and Summary

At this time 21% of the reporting members feel that the St. Lawrence Waterway Project will have beneficial effects on their buying mostly by reducing transportation costs. Others feel that the project will open up new sources of supply.

Although 79% contemplate no direct effect on their buying, some commented that there will definitely be indirect effects.

Your Business Survey Committee feels that the report this month is one of the brightest on which it has been able to report for some time. Improvement in the general condition of business is indicated by the strengthening of some parts of the report. These improvements stem mainly from an increase in production and employment, and the firmer positions of volume and profit.

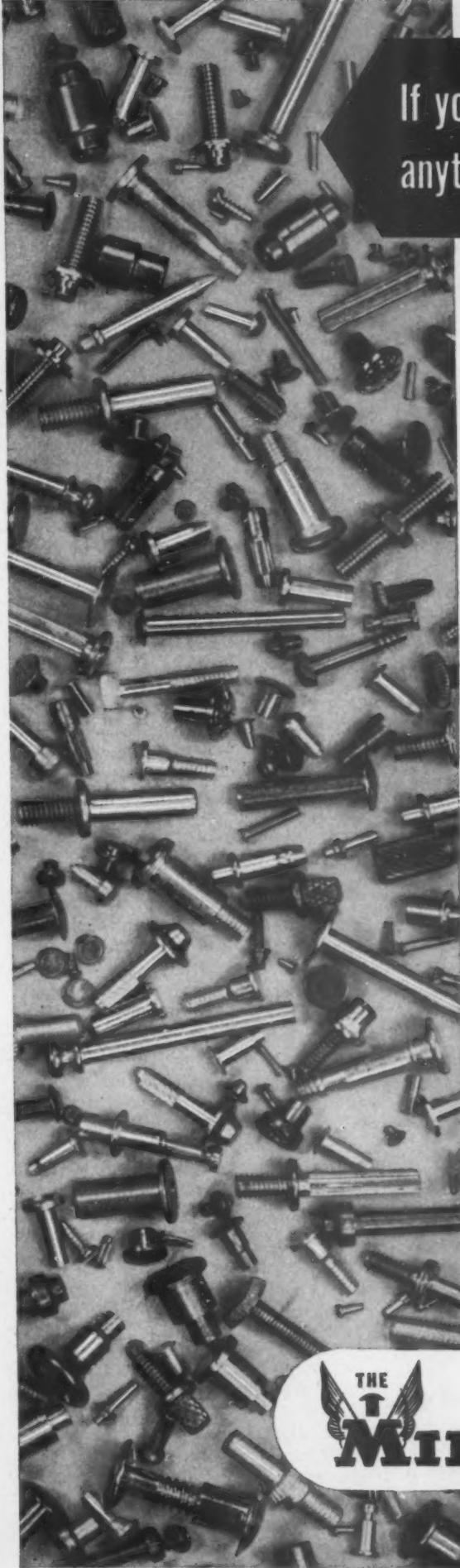
Process for Pre-Finishing Metal Products Cuts Costs

O'Sullivan Rubber Corp., Winchester, Va., has perfected a new process for bonding vinyl plastic on metal sheeting—steel, aluminum, magnesium, or copper. The resulting material, called Sullyvne-Clad Metal Laminate, is post-formed into the finished product, allowing important time savings in manufacture. It is said to practically eliminate refinishing costs for the life of the product.

Sullyvne-Clad Metal Laminate is extremely flexible on the production line. It may be bent, drawn,

stamped, crimped, or punched without destroying either the vinyl or its bond. Seams may even be welded to form air-tight, gas-tight closures; after weld is completed, minor repairs to the vinyl at the point of weld completely reconstitutes the liner and lamination at that point.

The plastic layer on Sullyvne-Clad Metal Laminate forms a protective coating ten times thicker than any conventional finish. This coating is extremely resistant to abrasion and corrosion. It withstands the effects of heat, light, and weather and is inert in the presence of most chemicals.



If your firm uses MACHINED parts that look anything like these COLD-FORMED parts...

We'll show you how to
**cut your
costs
30% to 70%**

9 out of 10 companies using small machined parts like these are wasting thousands of dollars per year!

We know! We've proved in plant after plant all over the country that parts cold-formed the Milford way cost 30% to 70% less than when made by machining or other methods . . . whether the quantity runs to a few thousands, or millions!

We'll prove that you can save 30% to 70% on your cost of small parts and our work won't cost you one red cent! Just tell us, "Yes, we use small machined parts that look like these." We'll take it from there! Contact your nearest Milford plant today!



MILFORD RIVET & MACHINE CO.

MILFORD
CONN.

NORWALK
CALIF.

ELYRIA
OHIO

AURORA
ILLINOIS

HATBORO
PENNA.



LOWELL

Reversible Ratchet SOCKET WRENCH

Everything you need in a reliable socket wrench:

1. **Strength** from the great crushing action of special heat-treated steel pawls... high tensile alloy handle... cap is all steel, not cast.
2. **Safety** from its strength... also, socket is held securely by snap ring and can't slip.
3. **Speed** gained through ease of handling—there is no lost motion.

Send for catalog 60-A showing our full line.

LOWELL WRENCH CO.

WORCESTER 8, MASS.

For More Information Circle No. 337 on Inquiry Card—Page 17

BOWERS BATTERIES

*Always
Better*

BOWERS BATTERY & SPARK PLUG CO., READING, PA.

For More Information Circle No. 338
on Inquiry Card—Page 17

The Difference In "Exterior" Plywoods

All Exterior-type plywoods are made with waterproof glue. The difference in plywoods lies in the construction. Ordinary plywood manufacture permits open defects and knotholes in inner plys—resulting in troublesome "core gaps."

SUPER-Harbord fir plywood and Harbomite plastic-faced plywood are made with extreme care. Only Harbor's special waterproof, boil-proof, freezeproof glue is used. In addition:

1. Only prime heartwood used, no sapwood.
2. Inner plys machine-edged and butted.
3. All solid wood core—no gaps.
4. Rehumidified for dimensional stability.

SUPER Harbord and Harbomite

are manufactured only by

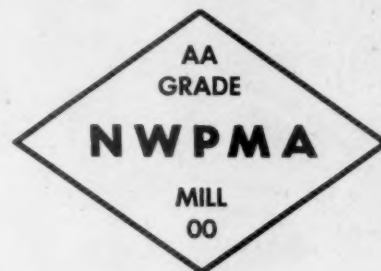
HARBOR PLYWOOD CORPORATION
ABERDEEN WASHINGTON

Sales Offices and Warehouses in Aberdeen, Atlanta, Chicago, Cincinnati, Indianapolis, Jacksonville, Los Angeles, Oakland, San Francisco, Tampa, Seattle.

For More Information Circle No. 339
on Inquiry Card—Page 17

Pallet Buyers Aided by New Industry Standards

National Wooden Pallet Manufacturers Association, 215 Barr Building, Washington 6, D.C., has announced the new Revised Minimum Standard Specifications for Warehouse, Permanent or Returnable Pallets. They represent several major departures from the original



Pallet Makers' Trade-Mark

NWPMA Standards issued in 1949, and a general up-grading of the minimums. The new Standards established for the first time two industry grades of pallets, set up a numerical system for pallet type designation, and place new limitations on fastenings, lumber requirements and manufacturing practices. They are intended for use as a base minimum for pallet purchasers. Copies of the revised specifications are available to all users without charge upon request to the Association.

The second development involves the adoption of an Association brand or trade-mark, which is tied into the new Revised Minimum Standards. When this trade-mark appears on wooden pallet products it is an assurance to the purchaser that the product is of specified grade, and not less than the Association minimums in quality. The brand also identifies the mill in which the pallet was produced, which will help purchasers to identify the sources of pallets which give the best performance. A drawing of the new diamond shaped trade-mark is shown here.

Explosion-Proof Motor

A 1250 hp, 2300 v, 1780 rpm explosion-proof motor (type ANZZ) is in production by Allis-Chalmers Mfg. Co., General Machinery Div., Milwaukee 1, Wis. It is the largest machine of its type to carry the Underwriters Laboratories Inc. label for operation in class 1, group D hazardous locations. The previ-

(Please turn to page 320)

PURCHASING

WALWORTH

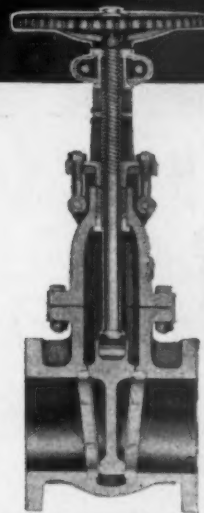


IRON BODY WEDGE GATE VALVES

Better because ...The entire valve, from hand-wheel to seat rings, is ruggedly constructed to withstand rough and frequent usage. Body, bonnet, and yoke are sturdy castings with large radius fillets. Dimensions and drilling of end flanges are in agreement with American Cast Iron Flange Standards. Stiffening ribs connect end flanges with the body neck to maintain a rigid connection with piping.

A wide range of Walworth Iron Body Wedge Gate Valves is available—through your Walworth Distributor—from which you can choose the right type to meet your most exacting conditions. Saddle-type valves as small as 1/4-inch; low pressure valves for water and gas pipelines up to 36 inches.

Whenever you need valves and fittings, choose from complete lines—in a variety of metals—manufactured by Walworth. For more information, see your Walworth Distributor or write: Walworth Company, General Offices, 60 East 42nd Street, New York 17, N. Y.



Walworth No. 726F OS&Y (Outside Screw and Yoke) Iron Body Wedge Gate Valve. OS&Y valves are recommended for services where it is desirable that the line fluid does not come in contact with the stem threads. Note the swing-type gland-eye-bolts for easy repacking. Sizes 2 to 30 inches.

WALWORTH

Manufacturers since 1842

valves . . . pipe fittings . . . pipe wrenches

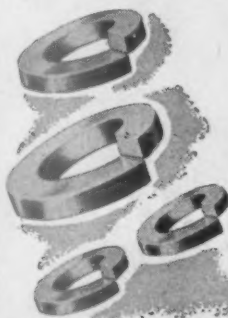
60 East 42nd Street, New York 17, N. Y.

DISTRIBUTORS IN PRINCIPAL CENTERS THROUGHOUT THE WORLD

**If You Need
SMALL PARTS IN A HURRY
plus sound engineering service
YOU CAN'T BEAT
GARRETT!**

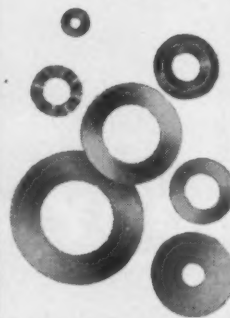


SPRING LOCK WASHERS



Garrett Controlled Tension spring lock washers assure greater holding power, longer life of every assembly. Garrett makes a complete line of lock washers to ASA and SAE specifications, plus many special types . . . in all metals and plated to your requirements.

FLAT WASHERS



Garrett gives you fast delivery from stock on the largest line of flat washers available. Precision-made in thousands of different sizes and types—standards and specials. Also made to your exact specifications to meet the individual needs of your product.

HOSE CLAMPS

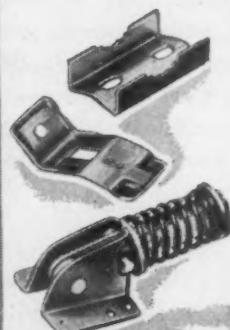


AN 737 . . . stainless steel, radial type with floating bridge and thumb-screw adjustment. Approved for aircraft use.

QS-100 & AN-748 . . . worm-type, self-locking screw. Plated to prevent corrosion. Approved by Armed Forces.

AUTO-SEAL . . . screw-type adjustment, scarfed tongue prevents pinching. Staked bolt and captive nut. Rustproofed.

STAMPINGS



Quick deliveries on small and medium stampings made to your specifications on automatic, high-speed precision presses. Finishing equipment includes tumbling, polishing, heat treating and plating.

MAIL THIS COUPON

Please send me without obligation complete data and technical details on Garrett parts.

NAME _____

COMPANY _____

ADDRESS _____

CITY _____

Manufactured by

Garrett
OF PHILADELPHIA

GEORGE K. GARRETT COMPANY, INC.

PHILA. 34, PA.

Introducing Nickel-Lume FOR BRIGHT NICKEL BARREL PLATING



H-VW-M takes great pleasure in introducing the Nickel-Lume Barrel Plating Process, ideal for producing bright-from-the-barrel decorative nickel coatings on small automotive parts, jewelry, novelties, nail clippers, files, hardware, fasteners, screws, and similar items. The new process is an application of Nickel-Lume, which made its appearance a year ago as an outstanding development in a bright nickel for rack plating.

Barrel installations have been in operation in the field for some time with many enthusiastic users. An important feature of this bright-nickel barrel process, is the consistency of color maintained even in recessed areas, as in hard-to-plate threaded parts. Subsequent chromium plating can be handled with ease since the nickel deposit is very active and, unlike many bright barrel processes, is not brittle.

Advantages of Nickel-Lume Barrel Plating are:

Uniform Brightness—deposits, right out of the barrel, are uniformly bright with a pleasing "clean," white color even in hard-to-plate areas.

Low Stress—deposits are ductile and have a low compressive or tensile internal stress.

Activation Not Required—no activation is required between the nickel and chromium or other subsequent deposits.

High Tolerance To Impurities—organics are tolerated in greater concentrations than in other bright baths.

Complete Control—complete analytical control of all constituents.

Wide Operating Range—current density and temperature have a wide range with no resultant loss of brightness.

Good Corrosion Resistance—nature of the addition agent plus constant deposit characteristics give a high level of protection to the plated surface.

Stability—not a "fussy" bath—remarkably stable over long periods of operation.

Nickel-Lume for Barrel Plating is the direct result of continuous research conducted at H-VW-M . . . another example of Platemanship in action. Complete details and a new instruction manual will be forwarded on request.

PLATEMANSHIP

Your H-VW-M combination—of the most modern testing and development laboratory—of over 80 years experience in every phase of plating and polishing—of a complete equipment, process and supply line for every need.

HANSON-VAN WINKLE-MUNNING CO., MATAWAN, N. J.
Plants: Matawan, N. J. • Anderson, Ind. • Grand Rapids, Mich.
SALES OFFICES: ANDERSON • BALTIMORE • BOSTON • CHICAGO
CLEVELAND • DAYTON • DETROIT • GRAND RAPIDS
LOS ANGELES • LOUISVILLE • MATAWAN • MILWAUKEE
NEW YORK • PHILADELPHIA • PITTSBURGH • ROCHESTER
SAN FRANCISCO • SPRINGFIELD (MASS.) • ST. LOUIS
STRATFORD (CONN.) • UTICA • WALLINGFORD (CONN.)



H-VW-M

1216

INDUSTRY'S WORKSHOP FOR THE FINEST IN PLATING AND POLISHING PROCESSES • EQUIPMENT • SUPPLIES

For More Information Circle No. 342 on Inquiry Card—Page 17

REAL

Dollar

SAVINGS ARE YOURS

when you specify

WYCKOFF Cold Finished Bars

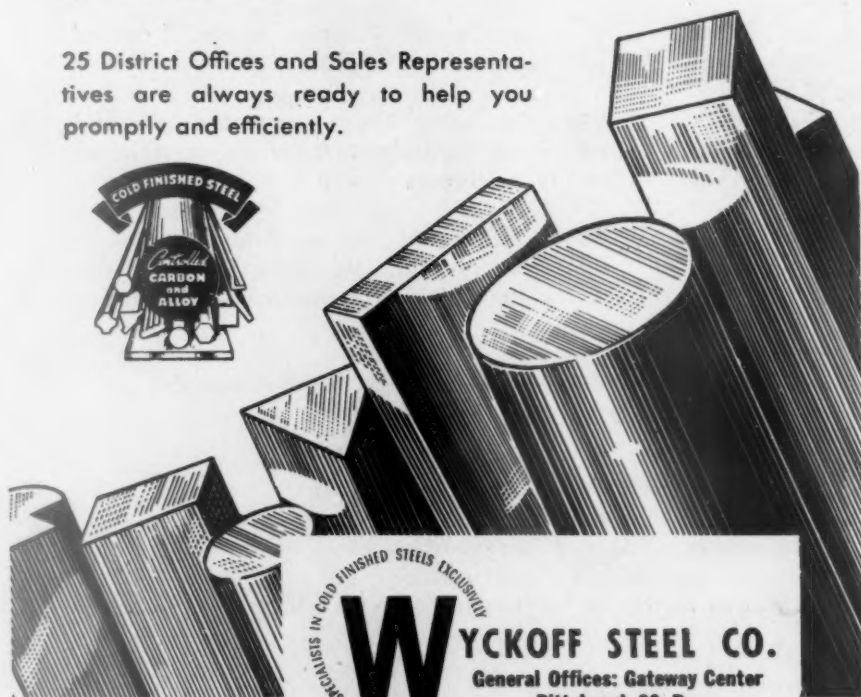
CARBON...ALLOY...LEADED

WYCKOFF ASSURES QUALITY CONTROL...

- ① Constant Maximum Production
- ② Increased Machining Speeds
- ③ Longer Tool Life

Incorporate these factors (DOLLAR SAVERS) in YOUR SPECIFICATIONS.

25 District Offices and Sales Representatives are always ready to help you promptly and efficiently.



WYCKOFF STEEL CO.

General Offices: Gateway Center
Pittsburgh 30, Pa.

Branch Offices in Principal Cities

Works: Ambridge, Pa. • Chicago, Ill. • Newark, N. J. • Putnam, Conn.

WYCKOFF STEEL PRODUCTS — Carbon and Alloy Steels • Turned and Polished Shafting • Turned and Ground Shafting • Wide Flats up to 12" x 2"
All types of furnace treated Steels

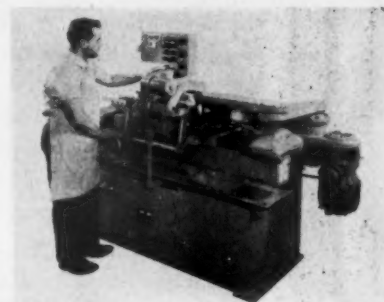
For More Information Circle No. 343 on Inquiry Card—Page 17

(Continued from page 316)

ous ratings were only up to 800 hp, 3600 rpm. The explosion-proof design of this motor is a modification of the company's totally-enclosed, fan-cooled motor line with tube-type air-to-air heat exchangers.

Machine Mills Original Master Airfoils

New England Machine & Tool Co., Berlin, Conn., is manufacturing a machine for generating original three-dimensionally contoured shapes from a series of simple



cross-sectional templates. The machine incorporates an electronic non-contacting tracer control and a fair-curve interpolating system. The tracer operates through a measured .001" length spark-gap and permits following the flexing feeler stock, since it never contacts it. Said to be the most accurate tracer control system in use, the machine is capable of speed ranges of some 25" per min. It has proved its application in job-shop manufacturing of (1) original air foil masters; (2) master cams for production airfoil milling and grinding machine; (3) metal patterns for blade casting processes; (4) machining of airfoil shapes.

All-Purpose Coolant

A cutting coolant that can be used interchangeably for stamping, punching, deep-drawing, tapping and lathe operations is being marketed by Pillsbury Chemicals, 6545 Georgia Ave., Detroit 11, Mich. The coolant is water-soluble and can be used full strength or diluted with up to 13 parts of water. It contains no sulfur, chlorine or other chemicals harmful to humans or metals. It is odorless, rancid free and non-toxic. It protects steel from rusting for many weeks.

Use Inquiry Card—Page 17



A JET AIRCRAFT... 6000 CAPACITORS AND CITIES SERVICE LUBRICANTS...



WHAT GOES INTO A CAPACITOR? Three Aerovox employees holding just a portion of the insulation and metal foil that goes into one small capacitor. After the material has been made into a roll, high vacuum pumps must remove all air and water before capacitor is impregnated with hot oils or waxes.



TWO OF AEROVOX'S VACUUM PUMPS: Water given off in high-vacuum process was problem to pump operation until Cities Service Engineer Ralph Ritchie showed Aerovox a Cities Service Pacemaker oil that really sealed bearings. Results: Continuous operation up 300%, oil consumption down 66%.

HOW DO THEY FIT TOGETHER?

There are almost 6000 capacitors in the electronic equipment of a modern jet aircraft... And it takes Cities Service lubricants to keep production of those tiny capacitors humming, says Aerovox Corp. of New Bedford, Mass.

A JOB FOR VACUUM PUMPS—Aerovox makes literally billions of capacitors... for jet aircraft, for radio, television, and hundreds of other industries. To have the greatest amount of insulation and withstand voltage strains, capacitors must be vacuum impregnated with hot oils or waxes. This requires high-vacuum pumps... but the water involved in the process often can hamper operation.

THE NEED FOR PROPER OIL—Sealing a pump's bearings against the water from the vacuum process was a difficult problem for Aerovox until they discovered Cities Service Pacemaker Series High-Vacuum Pump Oils. Look what happened then!

OPERATION UP 300%...OIL CONSUMPTION DOWN 66%

—Continuous operation increased 300% and oil consumption was reduced 66%. Says John Stager, Aerovox Chief Engineer, "Cities Service oil has proved far superior to any other oil thus far used."

Investigate the complete, high quality Cities Service line of oils and greases for your operation.

CITIES SERVICE
QUALITY PETROLEUM PRODUCTS

For More Information Circle No. 344 on Inquiry Card—Page 17

OCTOBER, 1954

321

In a circuit breaker when current overload occurs, the contacts open . . . a violent arc jumps across the gap . . . then is drawn upward through the breaker's "safety valves"—the arc chutes. In a split second, intense heat and dangerous gases are dissipated . . . the arc is quenched without harm to life or equipment.

National Vulcanized Fibre plays a vital and reliable role in this drama of industrial safety. It is utilized widely as a basic material in the sides and plates of arc chutes. Its inherent properties enable it to stand up under the rigorous punishment dealt by electrical energy "on the loose," and to help curb it effectively! These properties also make National Vulcanized Fibre the ideal material for dozens of other applications in power switching equipment and in thousands of uses within the broad electrical field. High dielectric and mechanical strength—excellent machinability—splendid formability—lightness of weight—great resistance to heat, shock and abrasion . . . name what you want in characteristics and capacity, and National Vulcanized Fibre is likely to have it, and more!

The chances are strong that there are many uses in your own business for versatile, economical National Vulcanized Fibre. Why not let us help you to find out?

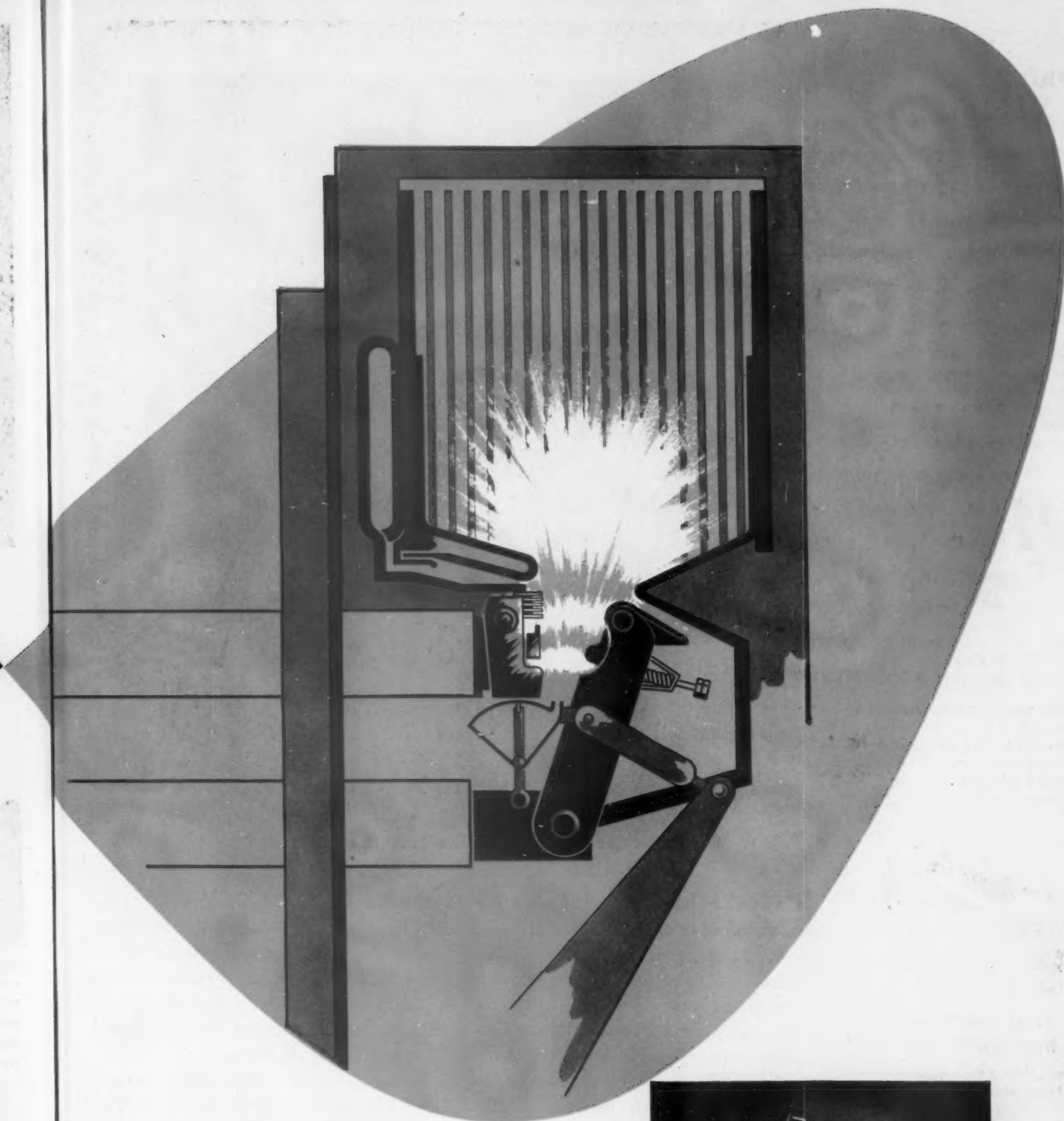


NATIONAL
VULCANIZED FIBRE CO.
WILMINGTON 99, DELAWARE

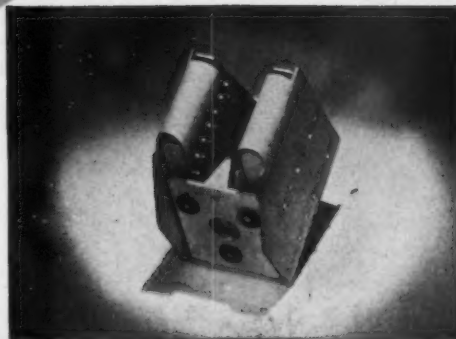
NOTHING TAKES THE PLACE OF VULCANIZED FIBRE

*Also manufacturers of Phenolite Laminated Plastic,
Vul-Cot Waste Baskets, Peerless Insulation,
Materials Handling Equipment, and Textile Bobbins.*

*things
happen fast
when*
**THE
CURRENT
SHOOTS THE
CHUTE!**

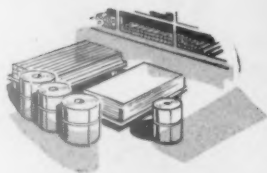


National Vulcanized Fibre barriers in the circuit breaker arc chute illustrated to the right really "torture" the arc—distort, elongate and tame it—so that no damage is done. Such severe service calls for excellent electrical properties and arc resistance. And, because it is a tough, strong material, vulcanized fibre also gets the nod for mechanical applications in the "breaker"—as bushings, pins, sleeves, washers, connector bars, etc. Maybe these applications will give you a clue as to how this material can help you. If you'll give us an idea of your intended end-use, we'll send appropriate technical and descriptive literature. Write to Dept. E-10, National Vulcanized Fibre Co., Wilmington 99, Delaware.



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Plus these Advantages



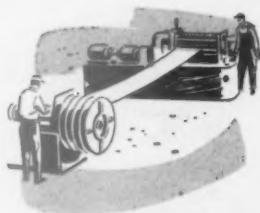
CONVENIENT WAREHOUSE STOCKS

Eliminate capital tie-up in obsolete or idle inventory through convenient warehouse stocks... cut your stock record keeping, reduce your accounting cost and warehouse overhead.



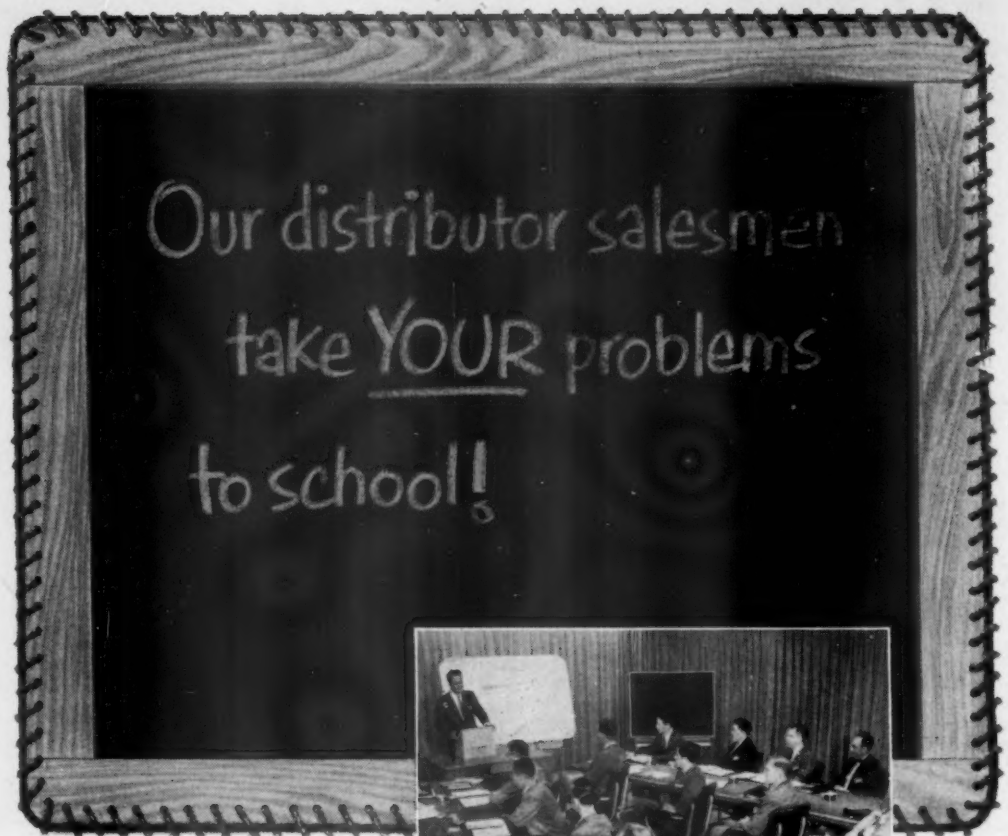
YOUR PARTNER IN PRODUCTION

When required, distributor salesmen will help on your production problems, backed by Reynolds technical service men in the field and the fully integrated staff at Reynolds home office.



EXTRA EQUIPMENT THAT LOWERS COST

Slitting, cutting, shearing, sawing and other specialized operations are money-saving distributor services. Put this equipment and service to work for you to help lower your costs.



Reynolds Trains

Distributor Salesmen in Aluminum Know-How to Give YOU Better Service!

Before your aluminum problems arise our distributor salesmen are trained to meet them. In Reynolds sales clinics these men learn the basics of engineering with aluminum—learn where and how and when to use the technical assistance of Reynolds staff of experts. Most important, perhaps, distributor salesmen become familiar with the vast Reynolds production facilities—know the practical

limitations of mill production.

Reynolds sales training clinics also offer the opportunity for salesmen to exchange ideas and experiences. Their practical education is broadened by what they've learned from you and other aluminum users.

It all adds up to this—when you call for Reynolds Aluminum, Reynolds-trained salesmen make sure you get the best in *Service*, too.



See "Mister Peepers", starring Wally Cox, Sunday nights on NBC-TV

Call us today for Reynolds Aluminum Distributor Service. We're as near as your phone.

REYNOLDS ALUMINUM

MODERN DESIGN HAS ALUMINUM IN MIND

For More Information Circle No. 346 on Inquiry Card—Page 17

REYNOLDS DISTRIBUTORS

ALABAMA

Southern States Iron Roofing Co., Birmingham

CALIFORNIA

Brasco Metals, Inc., Los Angeles
Clingan & Fortier, Inc., Fresno, San Francisco and
Vernon

Turner Metal Supply Co., (Wire, Rod, Bar)
Huntington Park

Union Hardware & Metal Co., Los Angeles
United States Steel Supply Div., Los Angeles

CONNECTICUT

American Steel & Alloys Corp., Hartford
Peter A. Frasse & Co., Hartford
Scoville Mfg. Co., (Wire, Rod, Bar) Waterbury

FLORIDA

Horne-Wilson, Inc., Jacksonville, Miami, Orlando
and Tampa
Southern States Iron Roofing Co., Jacksonville, Miami,
Orlando and Tampa

GEORGIA

Southern States Iron Roofing Co., Atlanta and
Savannah

ILLINOIS

Aluminum Distributors Inc., Chicago
J. G. Braun Co., (Architectural only) Chicago
Scoville Mfg. Co., (Wire, Rod, Bar) Chicago
United States Steel Supply Div., Chicago
Benjamin Wolff & Co., Chicago

INDIANA

Kasle Steel Corporation, Elkhart

KANSAS

Industrial Metals, Inc., Wichita

KENTUCKY

Southern States Iron Roofing Co., Louisville

LOUISIANA

Southern States Iron Roofing Co., New Orleans

MARYLAND

Clendenin Bros., Inc., Baltimore
Lyon, Conklin & Co., Inc., Baltimore

MASSACHUSETTS

Arthur C. Harvey Company, Boston

MICHIGAN

Kasle Steel Corporation, Detroit and Grand Rapids
McDonnell Bros., Inc., (Architectural only) Detroit
Meier Brass & Copper Co., Detroit

MINNESOTA

MacArthur Co., (Architectural only) St. Paul
United States Steel Supply Div., St. Paul
Vincent Brass & Copper Co., Minneapolis

MISSOURI

Industrial Metals, Inc., Kansas City and St. Louis
United States Steel Supply Div., St. Louis

NEW JERSEY

Edgcomb Steel Corporation, Hillside
Peter A. Frasse & Co., Lyndhurst
Mapes & Sprowl Steel Co., Union

NEW YORK

J. G. Braun Co., (Architectural only) New York
Edgcomb Steel Corporation, Hillside, N. J.
Peter A. Frasse & Co., Buffalo, New York, Rochester,
Syracuse

Mapes & Sprowl Steel Co., Union, N. J.
Ontario Metal Supply, Inc., (Wire, Rod, Bar) Rochester

NORTH CAROLINA

Southern States Iron Roofing Co., Raleigh

OHIO

Bridgeport Brass Co., (Wire, Rod, Bar) Cleveland
Kasle Steel Corporation, Cleveland
Mutual Manufacturing & Supply Co., Cincinnati
Vorys Brothers, Inc., Columbus

OREGON

Woodbury & Company, Coos Bay, Eugene, Medford
and Portland

PENNSYLVANIA

Athos Steel Service Co., Philadelphia
Peter A. Frasse & Co., Philadelphia
Merchant & Evans Co., Philadelphia
Penna. Industrial Supplies Co., Inc., Pittsburgh
Potts-Farrington Company, Philadelphia

SOUTH CAROLINA

Southern States Iron Roofing Co., Columbia

TENNESSEE

Southern States Iron Roofing Co., Memphis and
Nashville

TEXAS

Moncrief-Lenoir Mfg. Co., Dallas, Harlingen,
Houston, Lubbock, San Antonio and Temple
Vinson Supply Co., Dallas, Odessa and Snyder

UTAH

Salt Lake Hardware Co., Salt Lake City

VIRGINIA

Southern States Iron Roofing Co., Richmond

WASHINGTON

Clingan & Fortier, Inc., Seattle

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Intercom Equipment for Hazardous Locations

Explosion-proof inter-communication equipment for hazardous industrial areas is now available. Calls can be freely made from any area of a plant to any other area—regardless of the fact that the calls originate from a hazardous area.



Manufactured by Executone, Inc., New York, and equipped with explosion-proof or dust-tight Condulet switches, explosion-proof inter-com stations can be installed in areas where the presence of either flammable gases or vapors, or combustible dusts, prevents the use of ordinary inter-communication equipment. At an upstate New York natural gas firm, for example, an explosion-proof inter-com station and switches are located in the hazardous meter area, and are tied in with the rest of the plant's communications system. On offshore oil rigs of a major oil producer in Louisiana, explosion-proof equipment is located in the driller's sta-

tion, at the top of the derrick, in the pump room, engine room and at the rig office. The driller is able to call all of the other locations. They similarly may call him and carry on a two-way conversation.

Besides petroleum producers or marketers, explosion-proof or dust-tight speaker equipment provides communication at paint and varnish plants, distilleries, chemical processing centers, hospital surgeries and granaries.

To be fully explosion-proof, the cast ferrel switches must (1) withstand repeated internal explosions, (2) have threaded joints which prevent the escape of explosive flames. The reasons: Condulets are not gas-tight; gas-tight electrical fixtures require prohibitive installation and maintenance costs. Consequently, if an area is filled with gas, part of the gas seeps inside the Condulet where, when an arc occurs, it explodes. But the Condulet is unaffected since it is strong enough to withstand the pressure of the explosion. Also, because its joints are flame-tight, only cooled exhaust resulting from the explosion escapes to the outer, gas-filled atmosphere.

Combustible dusts do not explode but burn. What makes them dangerous is the rate at which they burn, since a roomful of minute dust particles, well-mixed with air, is easily set afire. Once a small portion of particles begin burning, they ignite the remainder almost instantly, creating the explosive chain reaction—the flash fire.

Steel Center Moves Little Despite Rise in Capacity

The expansion of steel capacity has been large and widespread in this country in the past two years but the geographical center of steel-making capacity has moved only slightly south from its previous location. This indicates that the expansion in two years has been fairly well distributed over the country according to the American Iron and Steel Institute.

The geographical center in 1952 was Beaverdam in Allen County, Ohio. It is still close to Beaverdam, although now about six miles south of it.

Beaverdam, with no steel mill, is a few miles northeast of Lima, Ohio, and a little more than 60 miles southwest of Toledo.

The national steelmaking capacity increased nearly 16 million tons from the start of 1952 to 124.3 million tons a year at the beginning of 1954.

In 1951, the geographical center of the industry was at Mt. Cory, Ohio, 10 miles northeast of the present center.

The geographical center of the industry is figured on the basis of miles times ingot capacity. Thus, a small increase in capacity at a great distance from the center exerts as much influence as a large increase near the center.

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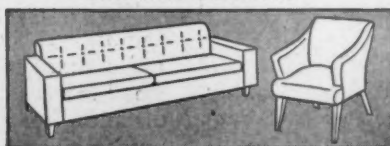
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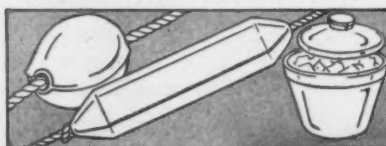
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For More Information Circle No. 348 on Inquiry Card—Page 17

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FED Series Flange Unit

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BEARING COMPANY
3025 W. 47th Street
Chicago 32, Illinois

For More Information Circle No. 349
on Inquiry Card—Page 17

Construction Industry Continues Heavy Use of Finished Steel

The construction industry in July and through the first seven months of 1954 was the strongest sustaining factor in shipments of finished steel products, American Iron and Steel Institute reports.

The direct shipments of steel to construction, exclusive of oil, gas and railroads, in the first seven months of this year were nearly 3,935,000 net tons, about 85,000 tons larger than one year earlier and rarely equalled.

The manufacturers of contractors' products, including such goods as air-conditioning, plumbing and hardware, which are destined for construction, received 5.6 per cent of domestic shipments of steel in July, the figure for the seven month period being 4.7 per cent, compared with 3.9 per cent during the first seven months of 1953.

The shipments of steel to makers of cans and closures decreased in July after setting a record in the first half of the year. The seven-month total continued extraordinarily large, the sum of 3,044,000 tons of steel in this classification being 231,000 tons greater than in the corresponding part of 1953.

Demand from the oil and gas industry also has been well sustained, the shipments of 3,007,000 tons of steel in seven months being only about 200,000 less than in the corresponding 1953 period.

The automotive industry, the largest manufacturing consumer of steel, obtained 707,000 tons in July, and over 6.7 million tons in the first seven months of 1954. The seven-month shipments were approximately 71 per cent as much as one year earlier. With the exception of construction and cans, practically all other major users of steel took less during the first seven months of 1954 than a year earlier.

In addition to the steel products obtained directly from mills, industries get steel through warehouses. The latter, exclusive of oil country distributors, obtained 19.4 per cent of domestic shipments of steel in July, compared with 16 per cent in seven months of 1954 and 16.9 per cent in seven months of 1953. Total shipments of steel products by the mills in the first seven months of this year were 37,764,709 tons, against 48,939,374 tons in seven months of 1953.

G.E. Tooling to Mass Produce High Frequency Transistors

The General Electric Company is tooling for mass production—in the millions—of low cost, exceptionally high frequency transistors.

Dr. W. R. G. Baker, GE vice president and general manager of the company's Electronics Division, said that plans, for large quantity production of the transistors, have been made possible through the development of a "rate-grown" method of mass producing essential transistor elements.

Transistors, which are made from the metal germanium under carefully controlled conditions of temperature and humidity and to microscopic tolerances, can perform many of the functions of the electron tube. They offer many advantages including longer life, greater dependability and resistance to shock and temperatures. Since, unlike the vacuum tube, transistors contain no filament, they require less power and lend themselves readily to miniaturization of all types of electronic equipment.

The rate-grown process, Dr. Baker said, appears to be the only technical process which shows any promise of a low cost device of this quality.

With wide scale sampling to the electronic industry expected to begin late this year, Dr. Baker said that mass production—on the order of many millions a year—will get under way within the next two years. He pointed out, however, that this would depend entirely on the speed of the electronics industry in designing circuits employing the new extremely high frequency transistors.

At the latest, Dr. Baker said, production, limited only by the volume of sales, will begin in 1955 at the company's Syracuse New York plant.

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USG provides highest quality gauges at competitive prices because its facilities are economically integrated for large volume, quality controlled production. Gauge for gauge—in every application classification—in every price class—USG has more to offer than any other make. This high quality at a competitive price is one reason why more Original Equipment Manufacturers specify USG than any other make!

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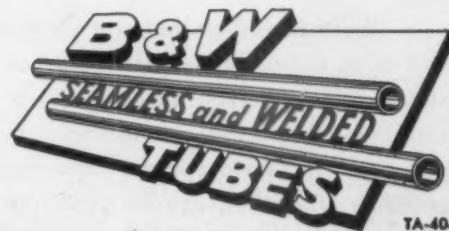
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There are far too many grades to show them all. And remember that when you select *the right tubing* for a particular application you must consider not only grades, but also methods of manufacture, sizes, surface finishes, heat treatment, lengths, shapes and special ends. Suffice to say that if our Mr. Tubes could show you samples of all his wares, they would reach into the millions.

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TA-4043(G)

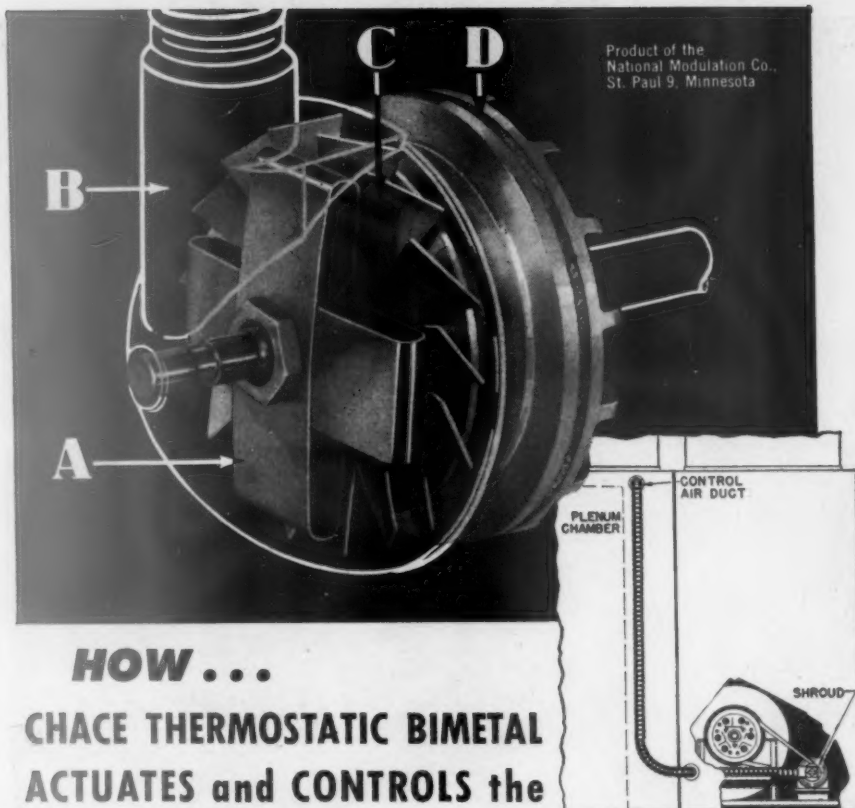
**THE BABCOCK & WILCOX COMPANY
TUBULAR PRODUCTS DIVISION**

Beaver Falls, Pa.—Seamless Tubing; Welded Stainless Steel Tubing
Alliance, Ohio—Welded Carbon Steel Tubing

For More Information Circle No. 353 on Inquiry Card—Page 17

OCTOBER, 1954

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HOW . . . CHACE THERMOSTATIC BIMETAL ACTUATES and CONTROLS the PALM BEACH Comfort Control System

The PALM BEACH Comfort Control System is a completely self-contained unit which, when attached to the blower motor of a forced air heating system, regulates desired amounts of warm air circulation by driving the blower at variable speeds. Among the many advantages of this control are elimination of high rotative speeds of most blower systems and resultant drafts caused by frequent starts and stops. The PALM BEACH Comfort Control is actuated by Chace Thermostatic Bimetal which aids in vastly increasing overall efficiencies and fuel savings.

The bimetallic element (A) is attached directly to the shaft. As the temperature in the warm air plenum chamber begins to rise due to burner operation and exceeds 80° F., warm air is drawn into shroud (B) by rotating suction fan (C). Sufficient tension is created in the bimetal to energize clutch (D), causing the blower to start at very slow speeds. As the temperature continues to rise, the Chace Bimetal, reacting in direct proportion to the amount of heat present, increases the pressure on the clutch, allowing the blower to speed-up.

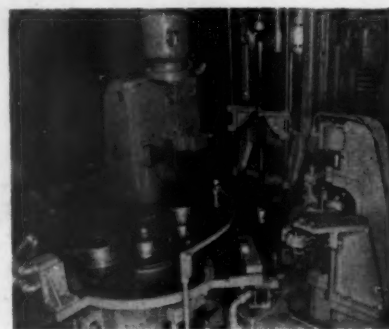
Chace furnishes thermostatic bimetal in 29 types, in strip, coil or in complete elements, fabricated and assembled to your specifications. Before development of your new controlling, indicating or protecting device, read our booklet, "Successful Applications of Chace Thermostatic Bimetal," containing valuable engineering data. Write for your free copy today.



For More Information Circle No. 354 on Inquiry Card—Page 17

Drill, Stamp and Broach in Single Machine

Colonial Broach Co. of Detroit has developed an automated 3-station machine which includes a drill unit, a broaching machine, and a stamping unit. A typical machining cycle on an automotive camshaft sprocket includes: (1) drilling one .2656" hole in the web of the sprocket, (2) broaching a .1885-.1905" keyway in the shaft hole, and (3) stamping the timing mark on the sprocket.



The key to this particular unit is the table loading and indexing mechanism. Parts are loaded 6 at a time into circular holders on the ends of oscillating loading arms. Each holder is designed so that the parts drop one at a time onto the indexing table. When the sixth part drops, the arm swings round to a position where the empty loader is reloaded and the other loader begins discharging parts into the chucks on the indexing table.

The three machining operations are performed at the rate of 200 parts per hour. One 10 hp motor supplies power and electrical circuits are designed to J. I. C. standards.

1 1 1

Booklet Describes Channels for Buying and Selling Abroad

Businessmen planning to buy or sell in foreign markets are offered important help in a booklet published by the Bureau of Foreign Commerce, U.S. Department of Commerce.

Called "Channels for Trading Abroad", the booklet gives a quick picture of the principal channels through which successful world traders import and export. It directs readers to sources of specific information.

The booklet may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C. for 25 cents.

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MEMBERS of the Institute of Industrial Launderers are uniquely qualified to assist you in developing the right uniform for any job. We have cooperated with the National Safety Council on safety programs in industry. We have worked with the U. S. Testing Company in the study of scores of technical points, such as shrinkage, color retention and tensile strength loss. We have had a hand in the development of standards of performance for work garments, in cooperation with the American Standards Association.

Our consultant service is free. You will put yourself under no obligation in using it before making any decision on work uniforms. You will pay nothing extra for its continuing benefits should you decide to rent from an Institute member.

Institute members have nothing to sell . . . but everything to rent. Not just uniforms . . . but everything from woven cotton shop towels to specialized protective garments. Members also can provide advice and service for fire retardant or acidproof safety clothing.



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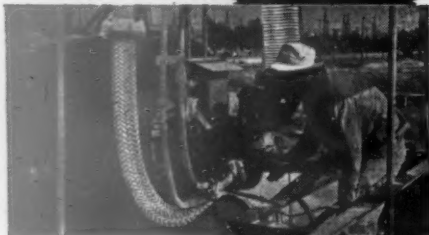
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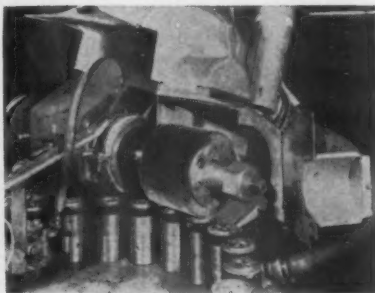
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For More Information Circle No. 356
on Inquiry Card—Page 17

Power Brush Setup Finishes 15,000 Parts Daily



A unique power brushing method eliminates a bottleneck by finishing 15,000 fuse components per 7 hour day. Rigid Army quality specifications are met and so are production schedules. The problem was removal of feather burrs and blending surface junctures after the fuse discs were machined. Engineers of the Osborn Manufacturing Co.

solved it by using a Parker automatic machine equipped with 24 rotating spindles.

Fuse discs are loaded on the spindles which rotate at approximately 60 rpm. The spindles, in turn, pass under a brush head which is rotating at 3600 rpm. When the part has been brushed, an air jet lifts it from the spindle and blows it into a chute. The spindle is then ready for re-loading; it does not rotate at the loading station.

The brush head is driven by a 7 1/2 hp motor and direction of brush rotation is reversed every 2 1/2 hours by a manual switch. Maximum brush life is obtained by changing over to finishing smaller flanges periodically. This way, each head of brushes (14 sections) is used for approximately 9 months.

Die Casting Design Change Hikes Output

A small change in the design of a zinc gear die-casting recently solved a production problem which had been plaguing the Turner & Seymour Manufacturing Company for quite a while. This company markets an egg-beater which uses three zinc die castings: the main frame, the crank, and the driving gear. The gear posed the biggest problem.

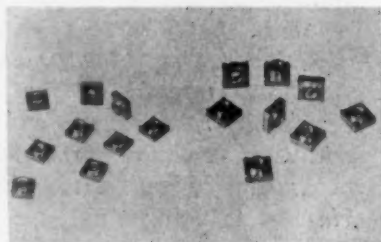
To impart both sales appeal and longer life to the egg-beater, the three die-castings are chrome plated. However, many of the gears were not entirely free of surface blemishes, which meant that Turner & Seymour had to spend excessive time in plating and polishing them. Production costs were too high.

When this gear and the problem it posed were first brought to Precision Castings Company's engineers, they suggested that it be slightly redesigned. The shroud encircling the gear was unnecessarily thin, and this accounted for the pin holes, porosity, heat marks, and cold shot. Some zinc apparently solidified before completely penetrating the thin outer rim, thus preventing its being filled entirely.

Precision Castings Company built different dies which increased the wall thickness as well as the draft at the ends of gear teeth. Together with better venting and gating practices, these new dies have permitted production rates of ac-

ceptable gears to be vastly stepped up. Rejects, despite a highly critical inspection of buffed parts, dropped noticeably.

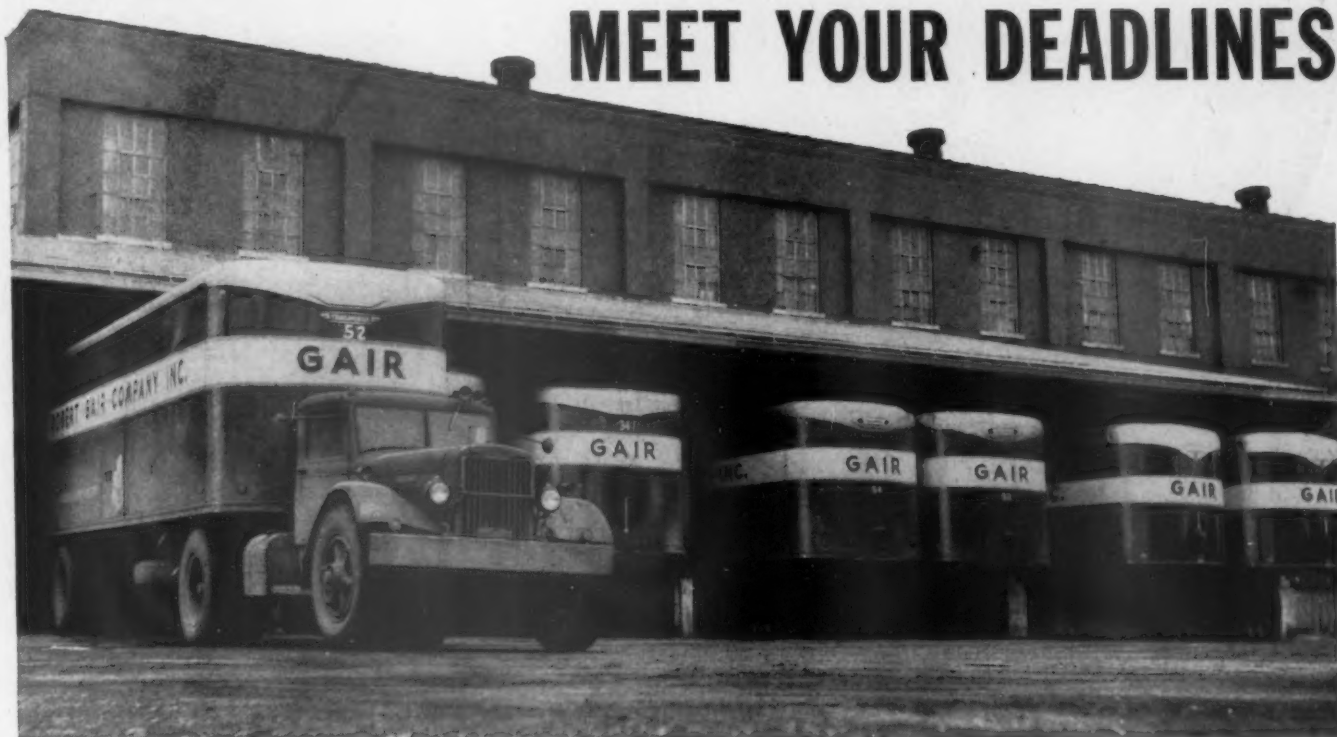
Nuts Bite Into Sheet Metal, Receive Screws Unassisted



Cadmium plated steel nuts that bite into the surface of sheet metal, forming a permanent torque-resistant thread in the sheet, receive screws without the need to be held by fingers or wrench. Sharp prongs on the four corners are firmly embedded in the metal by a hammer blow or arbor press. This locks the fastener securely against screw torque and a collar around the thread bites into the side of a hole in the sheet, anchoring the nut against reverse fall-out. Torque resistance, almost twice that of similar fasteners, permits greater force on screws by freeing hand formerly occupied in holding a wrench on the nut. The manufacturer is Fox Products Co., 4720 N. 18th St., Philadelphia 41, Pa.

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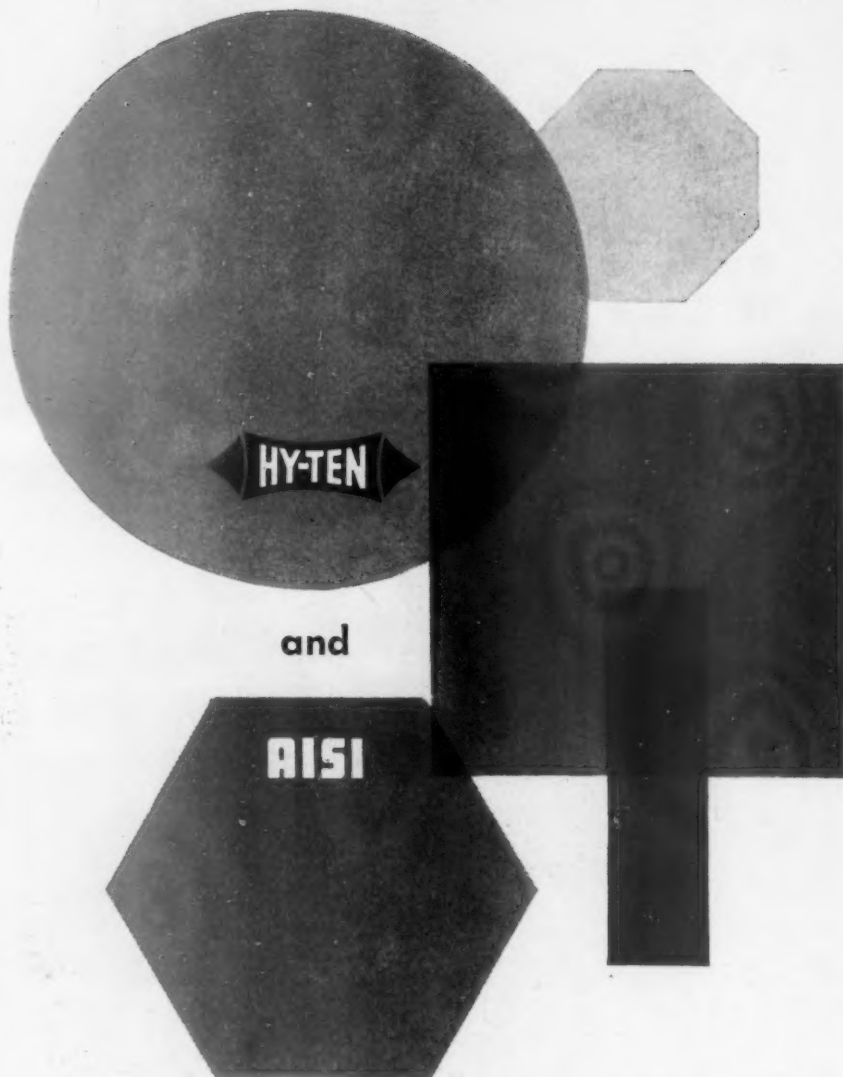
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OCTOBER, 1954

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Adjustable False Bottom Utility Drums

Actron Engineering Co., 11934 Lorain Ave., Cleveland 11, Ohio, announces a simple inexpensive device to eliminate operator fatigue and save time in handling small parts. With a few strokes of the



handle, the operator raises the false bottom, i.e. stem and platform, so that parts are within easy reach at all times. Bending, reaching or dumping parts are eliminated with a resulting saving of time. The stem and platform of the drum are detachable from and interchangeable with the hoisting frame. Utilizing this type of construction, one hoisting frame at the work station can serve any loaded drum.

1 1 1

Aluminum Gives Flat Wall Paint New Depths and Tones

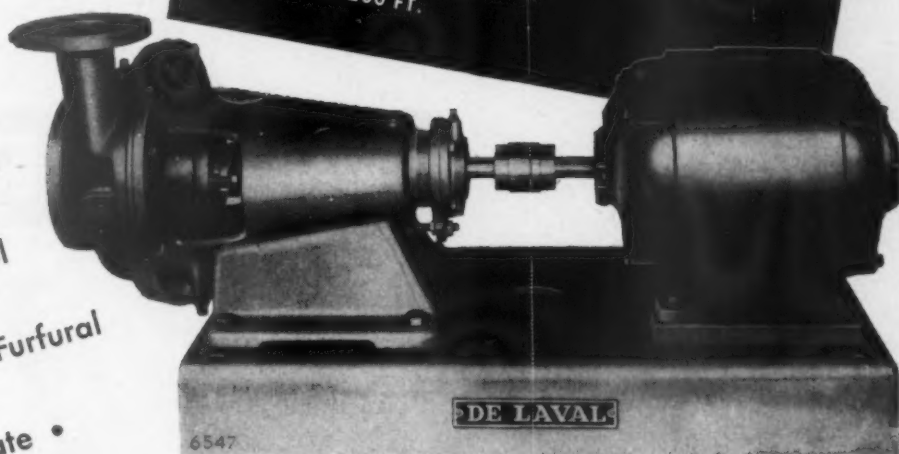
A new type of wall paint, said to be an important contribution to "coloramics" for industrial plants, has been introduced by Sherwin-Williams Company, Cleveland, Ohio.

Aluminum is used as the principal ingredient in the new paint, called Opal-Glo. It is offered in seven shades—gray, rose, aqua, chartreuse, blue, green and brown. The aluminum is said to subtly alter and improve the appearance of the flat wall paints. It gives the paint unusual depths and tones without causing the metallic sheen that is usually associated with aluminum finishes.

Properties of the paint show promise for industrial maintenance. Among these are a 50% reflectivity of light, even with the deeper colors, good durability, unusual cleaning ease, surprising beauty, and high coverage.

• Calcium chloride brine • Flushing liquor
 Sodium sulphate • Asbestos fiber & cement mix • Green liquor •
 Soap solution • Grinder coolant • Carbon slurry • Cane wash • Salt brine • Sea water •
 • Caustic solution • Bleach liquor • Grape juice concentrate • Tomato juice concentrate •
 Tomato puree • Propanol • Soap liquor • Cane juice • Aqueous lime • Coke oven oil •
 • Paper stock • Waste sulphite liquor • Alkylaryl sulfonate • Sugar liquor • Vinyl pyridine
 • Saturated brine • Grape juice • Tomato juice • Press liquor • Calcium bisulphite • Melt
 Phenolized ammonia • Ammonia liquor • Sulphuric acid • Paraffine oil and water • Sludge
 • Milk waste • Gritty water • Cane syrup • Lime & soda solution • Cachaza • Clear juice
 White water • Mineral oil • Chromic acid
 Brine • Vegetable oil • Licorice liquor •
 • River water • Benzine thinner • Mash
 Methylene chloride • Sodium hydroxide
 Sizing solution • Alcohol •
 • Steep soda • Caustic soda
 Black liquor • Ethylene glycol
 • Fuel oil • Furfural
 • Condensate •
 Cement • Gasoline • Depanol
 Flume water •

*One pump handles
 all these liquids...*
DE LAVAL
CPO PROCESS PUMP
 CAPACITIES TO 2,000 GPM
 HEADS TO 200 FT.



WRITE FOR BULLETIN 1125-B



DE LAVAL Centrifugal Pumps

DE LAVAL STEAM TURBINE COMPANY

807 Nottingham Way, Trenton 2, New Jersey

DL 381

For More Information Circle No. 359 on Inquiry Card—Page 17

OCTOBER, 1954

337

It pays to know the difference

The hex socket identifies all socket screws, but beyond the hex there's a big difference. If you think all makes are alike — if you have never tried P-K Socket Screws — you are blocking your way to *proved* benefits that other buyers are using to advantage.

Look *beyond* the hex. For example, until you see P-K product information for the first time, you'll have no idea how much more helpful it is . . . how much time it saves . . . how much easier it makes the job.

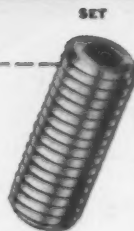
Look Beyond the Hex

Compare every detail of product and service. You'll find P-K Socket Screws take top rating by every test.

For cost-wise assembly, you need all these advantages. Why miss out on any of them? Try P-K Socket Screws. Get samples, information from your P-K Distributor or write. Parker-Kalon Division, General American Transportation Corporation, 200 Varick Street, New York 14.

for Planning Aids patterned to your special needs

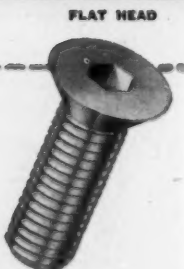
PARKER-KALON®



SET



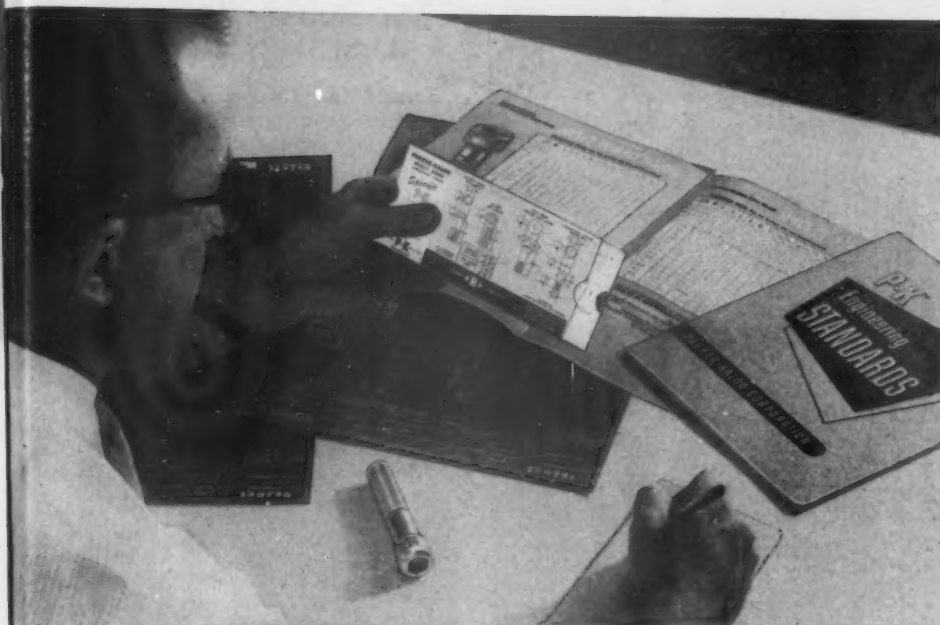
CAP



FLAT HEAD

IN STOCK

for immediate delivery — see the nearby P-K Socket Screw Distributor —



P-K ENGINEERING DATA

is prepared to meet the special needs of design, project, and methods engineers, to give anyone concerned with planning assemblies complete, clear, concise information. The popular P-K Socket Screw Dimension Finder is a pocket size plastic slide chart that gives all needed dimensions at a glance.

P-K PRICE DATA

wins praise from purchasers because it is easier to use, speeds ordering, prevents errors.

→ **FOR ADVANCED DESIGN**
that speeds assemblies — makes them simpler, stronger — and saves errors.

→ **FOR TOP QUALITY** and
tolerance gaged to your most exacting specifications — and guaranteed.

→ **FOR ASSEMBLY STRENGTH**
okayed in a million punishing tests by thousands of satisfied users.

→ **FOR SUPPLY SERVICE** set
up for fast action and lower purchasing expense — by local Distributors.

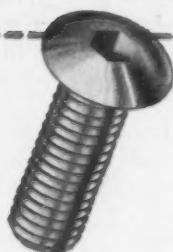
→ **FOR ANY STYLE OR SIZE**
You'll find any Socket Screw you need in P-K's complete line. Hex Keys in all sizes, and several handy sets.

GET **ALL**
THESE ESSENTIALS OF
COST-WISE ASSEMBLY

GET **P-K**

SOCKET SCREWS

BUTTON HEAD



SHOULDER



PIPE PLUGS



HEX KEYS



your local Supply and Service Specialist





Right, O.T.S.R. titrates Oakite solution used to clean Harrison coolers. His constant service assures best results.

He puts his KNOWS into your business... and saves you money

An Oakite Technical Service Representative knows how tough a cleaning job can be... he knows the problems purchasing men face in selecting the right cleaning material. That's why he likes being there with tank-side service when production cleaning problems arise.

By being on top of every problem, the Oakite man is in a position to discuss intelligently and factually purchasing problems. He can make the recommendations that offer the greatest economies... that save you time and work spent finding what you need.

Tank-side service is an old Oakite custom that doesn't stop with the sale of a cleaning material. It's part of the deal that gives you the best cleaning job money can buy. See for yourself. Call in your Oakite Representative today.

And if you want a sample of Oakite desk-side service, write for the handy booklet, "Some Good Things To Know About Metal Cleaning." It's free, and you'll find it a valuable, top-drawer guide to purchasing industrial detergents used in metal fabrication. Write: Oakite Products, Inc., 54 Rector Street, New York 6, N. Y.

Technical Service Representatives in Principal Cities of U. S. and Canada



For More Information Circle No. 361 on Inquiry Card—Page 17

Magnetic Fanner Separates Light Sheets, Can Lids

Eriez Mfg. Co., Erie, Pa., has brought out a fanner magnet, designed especially for separating lightweight stock such as thin gage metal blanks, tin plate, can lids, etc. The operating principle of this low-cost, ruggedly built sheet fanner is based on the fact that, placed adjacent to a stack of ferrous sheets, the



powerful permanent magnetic unit induces like polarity in the sheets. This causes them to repel each other so that the upper pieces in the pile tend to rise in the air and are sustained there separated from each other. Thus the operator can take individual sheets from the pile without fumbling or delay, with greater protection to the operator's hands.

1 1 1

Dept. of Commerce to Begin Census of Business

About 3 million establishments engaged in distribution, manufacturing and mining will be canvassed by mail early in 1955 by the Bureau of the Census, U. S. Department of Commerce to cover operations of these establishments during 1954.

The Census of Business will cover about 2,750,000 retail, wholesale and service establishments, collecting information on number of establishments, sales, employees and payrolls by kinds of business for each State, county, and places of 2,500 or more population. It will also cover information on inventories, credits and other subjects.

The Census of Manufactures will cover operation of nearly 300,000 manufacturing establishments and will report on production of commodities, employment, payrolls, value added by manufacture, consumption of fuel, power, materials and other important items for more than 450 industries. Statistics will

(Please turn to page 344)

For More Information Circle No. 362
on Inquiry Card—Page 17→

PURCHASING



SSW forged ring flanges enable Pfaudler to increase pressure capacities of glass-lined tanks 50%

By switching to Standard Steel forged ring flanges for manholes and larger openings in their glass-lined tanks, The Pfaudler Company, Rochester, N.Y., has increased normal pressure capacities 50% above previous limits. These rolled, weldless flanges replace integral flanges formed in the tank wall or flanges formed from steel plate and welded to the tank shell.

Standard Steel forges these 24" to 84" ring flanges to heavier and more efficient shapes than Pfaudler could get previously. An increase in the flat surface area of the flanges permits increased pressures. The switch to forged flanges also has eliminated the serious problem of warping during annealing or stress relief before applying glass linings.



SSW shapes these rings as close as possible to finish dimensions in the rolling operation to minimize the amount of metal removed in roughing and finishing cuts. However, ample material is available for forming a bead on the edge of the flange to retain the clamps which hold the covers tightly on the gaskets.

Pfaudler's use of Standard Steel's weldless flanges is just one of the very diverse ways ingenious users are improving their products by switching to roll forged rings and flanges (12" to 144" O.D.). It'll pay you, too, to investigate how they can benefit you. For more facts please write to Department 8636, Standard Steel Works Division, Baldwin-Lima-Hamilton Corporation, Burnham, Pennsylvania.

Standard Steel Works Division
Burnham (Mifflin County), Pa.

BALDWIN-LIMA-HAMILTON

General Offices: Philadelphia 42, Pa. • Offices in Principal Cities

Where to buy

All of the following distributors are equipped to give you quick service and help you with suggestions for installing ALGRIP.

CALIFORNIA

A. M. Castle & Co.
717 Potter Street
Berkeley 10, California
Telephone: BErkeley 7-2210

A. M. Castle & Co.
2200 East 55th Street
Los Angeles 58, California
Telephone: JEfferson 4261

A. M. Castle & Co.
800 Indiana Street
San Francisco 19, California
Telephone: ATwater 2-6900

CONNECTICUT

The Bridgeport Steel Company
1034 Bridgeport Avenue
Milford, Connecticut

P.O. Box 415
Milford, Connecticut
Telephone: Milford 2-2591

ILLINOIS

A. M. Castle & Co.
1132 W. Blackhawk Street
Chicago 22, Illinois
Telephone: MIchigan 2-6900

MASSACHUSETTS

Brown-Wales Company
165 Rindge Avenue Ext.
Cambridge 40, Massachusetts
Telephone: UNiversity 4-4300
Hartford Office: JACKson 7-8607
Auburn Warehouse: LEWiston 4-5706

MICHIGAN

Jones & Laughlin Steel Corp.
3289 Beaufait Avenue
Detroit 7, Michigan
Telephone: WA 1-0470

Kasle Steel Corporation
4343 Wyoming Avenue
Detroit 32, Michigan
Telephone: TIFFany 6-4200

MISSOURI

A. M. Castle & Co.
1 West 10th Street
North Kansas City 16, Missouri
Telephone: NOrclay 3666

NEW JERSEY

Grammer, Dempsey & Hudson Inc.
212 Rome Street
Newark 1, New Jersey
Telephone: MArket 2-7911
HEnderson 4-6216
COrlandt 7-6220

Morrison Steel Company
Jersey Avenue
New Brunswick, New Jersey
Telephone: CHarter 7-8400
MArket 2-5707
HEnderson 3-7699

NEW YORK

Ernst Iron Works, Inc.
75 Lathrop Street
P.O. Box 987
Buffalo 5, New York
Telephone: FIllmore 5000

OHIO

Art Iron & Wire Works, Inc.
860 Curtis Street
Toledo 9, Ohio
Telephone: MAin 1261

Republic Structural Iron Works
1290 East 53rd Street
Cleveland 14, Ohio
Telephone: ENdicott 1-4400

OKLAHOMA

McCormick Steel Company
P.O. Box 1234
Oklahoma City, Oklahoma
Telephone: MEIrose 4-1492

PENNSYLVANIA

Morris, Wheeler & Co., Inc.
Fox Street and Roberts Avenue
Philadelphia 29, Pennsylvania
Telephone: RAycliff 5-6060

Horace T. Potts Company
Erie Avenue & D Street
Philadelphia 34, Pennsylvania
Telephone: GArdfield 6-4600

Follansbee Metal Warehouses

South 6th & Bingham Streets
Pittsburgh 3, Pennsylvania
Telephone: HEmlack 1-5803

Lockhart Iron & Steel Company

Pittsburgh 30, Pennsylvania
Telephone: FEderal 1-1081

TEXAS

McCormick Steel Company
1110 Lockwood Drive
Houston 20, Texas
P.O. Box 1756
Houston 1, Texas
Telephone: ORchard 6671

McCormick Steel Company
Plainview Highway
Lubbock, Texas
Telephone: Lubbock 2-8793

WASHINGTON

A. M. Castle & Co.
3660 E. Marginal Way
Seattle 4, Washington
Telephone: ELliot 0565

WISCONSIN

A. M. Castle & Co.
338 South 17th Street
Milwaukee 3, Wisconsin
Telephone: MIchell 5-3400

CANADA

A. C. Leslie & Co., Limited
5435 Royalmount Avenue
Montreal 9, Quebec
Telephone: BYwater 5501

A. C. Leslie & Co., Limited
130 Commissioners Street
Toronto 2, Ontario
Telephone: RI 3561

HAWAII

Lacy Manufacturing Co.
Steel & Supplies Division
P.O. Box 1328
110 Puuhale Road
Honolulu, T. H.
Telephone: 82291

A.W. ALGRIP Abrasive Rolled Steel Floor Plate
ALAN WOOD STEEL COMPANY

Conshohocken, Penna.

ALGRIP*

ALGRIP has a truly non-skid surface that remains slip-proof, even when covered with oil or grease. Hundreds of embedded, abrasive particles put extra safety into every footstep. And ALGRIP *stays* slip-proof because wear simply exposes new skid-stopping particles.



TELEPHONE YOUR DISTRIBUTOR FOR PROMPT SERVICE



the non-slip abrasive floor-plate that reduces accidents and lowers insurance premiums.

For More Information Circle No. 363 on Inquiry Card—Page 17

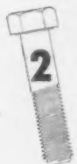


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SAVE TIME!

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Write for FREE Catalog 34D, the *one complete reference handbook* to stainless steel fastenings! Varieties, sizes, prices and discounts *at a glance!*



**ANTI-CORROSIVE
METAL PRODUCTS CO., INC.**

**Castleton-on-Hudson,
New York**

For More Information Circle No. 364 on Inquiry Card—Page 17

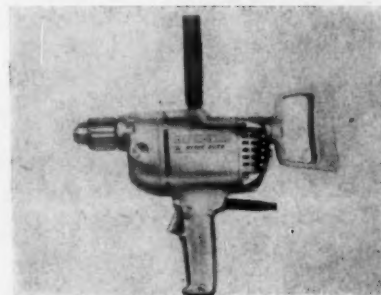
(Continued from page 340)

be compiled for States, counties and cities of 10,000 or more population for 1947.

The Census of Mineral Industries will cover the operations of about 35,000 establishments engaged in mining, petroleum production and quarrying. In addition to information on output, statistics will be compiled on employment, payrolls, fuel and power consumption and other items, and will be published for States and all counties with important mineral industries.

1 1 1

Heavy-Duty Electric Drill



A heavy-duty $\frac{1}{2}$ " electric drill with a powerful 6-amp motor is said to develop 45% more chuck twist power than other drills in a comparable class. It weighs only 10 lb, and measures $14\frac{1}{4}$ " long by $3\frac{1}{2}$ " wide and $9\frac{7}{8}$ " high. The rear spade-type handle is adjustable for vertical or horizontal position, or may be removed entirely in cramped quarters. The drill has a $\frac{1}{2}$ " gear type chuck for positive slip-proof grip on bits. Bit capacity is rated at $\frac{1}{2}$ " for steel and $1\frac{3}{8}$ " in wood. A universal 115 v a-c, d-c motor drives the chuck at 550 rpm. The spindle offset is $1\frac{1}{8}$ ". Standard equipment includes gear chuck, key, key holder, auxiliary handle, spade handle and ten-foot electrical cord. It is a product of Porter Cable Machine Co., Syracuse 8, N. Y.

1 1 1

Automatic Loader Speeds Parts Handling

A new universal floor type automatic loader for presses and vertical spindle machine tools is now available. It has two arms that are rotated through 120 deg. arcs permitting it to pick up parts individually from a conveyor, deposit them in the machine tool, and then unload them on another conveyor

(Please turn to page 348)



"The purchasing function is one of the strongest links in our chain of operations."

K. C. TOWE, President, American Cyanamid Company

More and more top companies have recognized that the Purchasing Agent's contribution to efficient, profitable operation makes him a key management man. PURCHASING Magazine has served industry's PAs since 1915. The unchallenged leader in its field, PURCHASING offers you the largest available coverage of industrial purchasing executives.

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C-MPD carries only listings and product facts on the equipment, parts, supplies, and materials needed by industry. Non-industrial listings and ads are *rigidly excluded!* What's more—all the listings and ads on a given product appear in just one place . . . under the product's *primary name*.

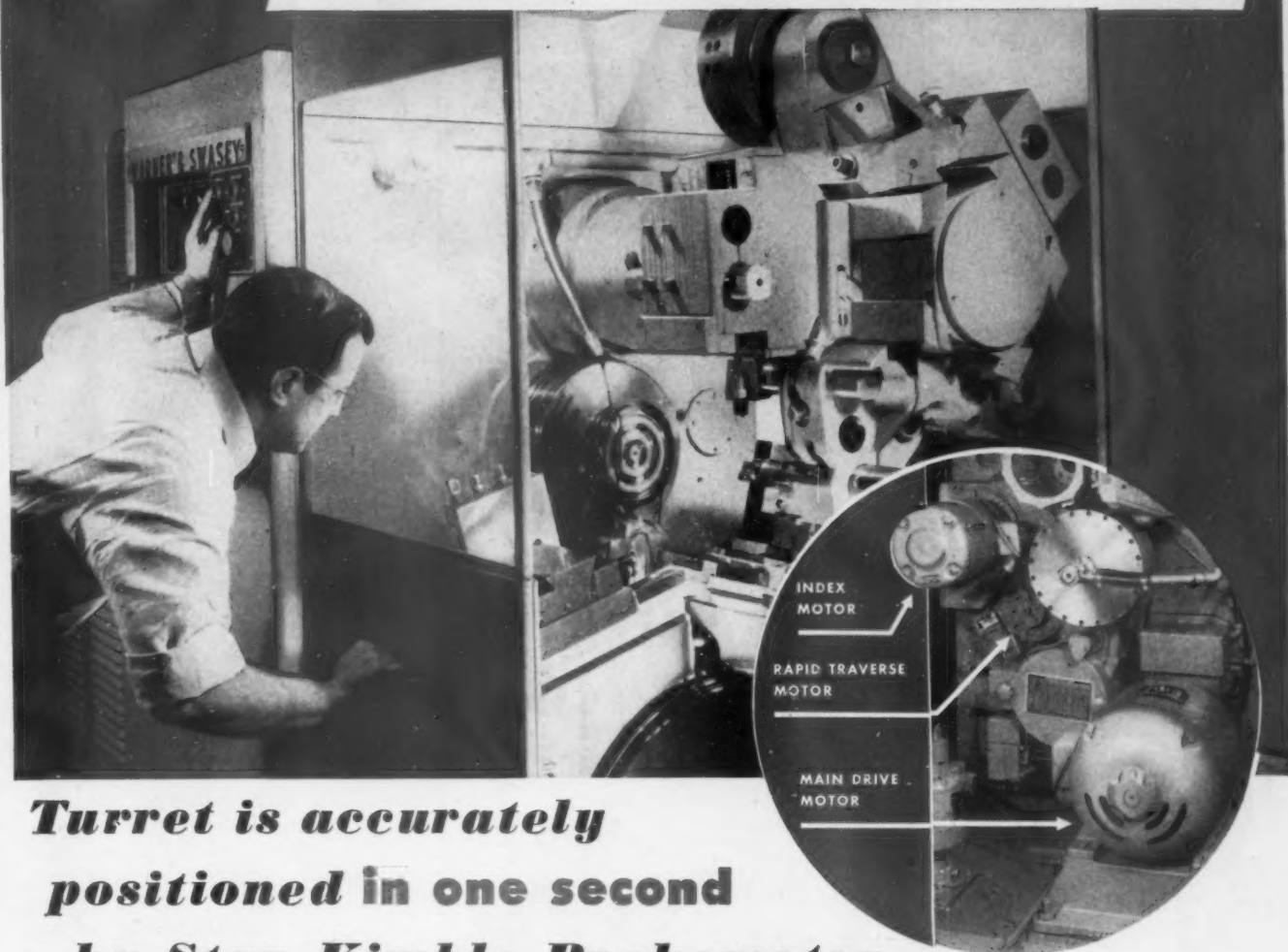
How about you? Do you want to find the right suppliers . . . faster? C-MPD will help you do just that. Use the purchasing directory industrial buyers reach for—with one hand. The more you use it—the better you'll like it. Write for literature today.

**Conover-Mast
PURCHASING DIRECTORY**

205 EAST 42nd STREET, NEW YORK 17, N. Y.

For More Information Circle No. 366 on Inquiry Card—Page 17

On the NEW Warner & Swasey Automatic Chucking Machine



Turret is accurately positioned in one second by Star-Kimble Brakemotor

Turret of this production-speeding Warner & Swasey 2AC Machine—with turret-and-tool weight of 1250 pounds—is rotated 72° after each operation by a standard 1 hp Star-Kimble Brakemotor . . . and is accurately positioned for the next operation *within 1 second!* Fast, time-after-time precision stops of the Star-Kimble design make this possible.

FOR THE RAPID TRAVERSE, too—calling for turret-and-tool movement at 4 inches per second, with a maximum of 10 starts and stops in 45 seconds—Warner & Swasey has selected a completely special Star-Kimble 1½ hp construction designed both for this severe service and for the limited space available in the machine column.

AND FOR THE MAIN DRIVE MOTOR, which is selected by the customer, many purchasers of 2AC automatic chucking machines are specifying a 15 hp Star-Kimble dripproof squirrel-cage motor of basically standard construction, with special electrical characteristics specifically designed for this application.

These three types of motors are typical of Star-Kimble's ability to supply: standard motors for which all parts and subassemblies are carried in stock; modified types which can be economically produced in small quantities; and completely special designs in volume runs. Your inquiries on your specific requirements are invited.

Standard and special motors of all types, 1 to 125 hp; generators and motor-generator sets, 1 to 100 kw; marine motors, ½ to 125 hp.



Star-Kimble MOTOR DIVISION
MIEHLE PRINTING PRESS & MFG. CO.

213 Bloomfield Avenue

Bloomfield, New Jersey

For More Information Circle No. 367 on Inquiry Card—Page 17



**BUILT
FOR THE
JOB**

**Bond[®]
CASTERS**

**FOR FASTER, EASIER
MATERIALS HANDLING**

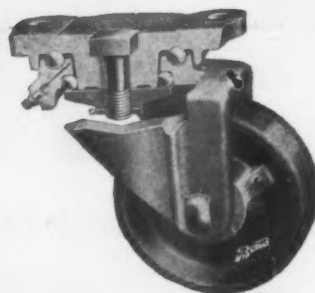
THE kangaroo has a real handling problem . . . but Nature gave it the jump on its neighbors with a handy carrying pouch, built for the job. And you can get the jump on your materials handling problems by specifying Bond "Built-for-the-Job" Casters. For dependability, economy and trouble-free service, your best buy is Bond!

See your industrial distributor — he has the right Bond Casters built-for-your-jobs.



**1-A Series—Stationary
Caster**

**41-A Series—Structural
Steel Stationary Caster**



**36-A Series—Double
Ball Race Swivel Caster**



**3-A Series—Single Ball
Race Swivel Caster**



**40-A Series—
Double Ball Race
Structural Steel
Swivel Caster**

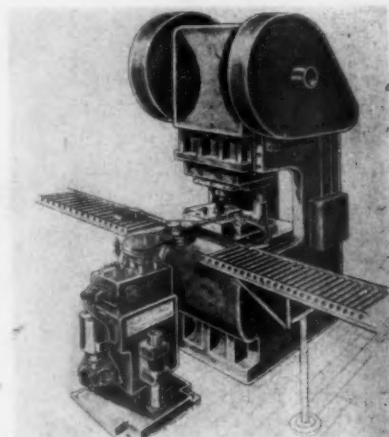
**BOND FOUNDRY & MACHINE CO.
Manheim, Penna.**

For More Information Circle No. 368 on Inquiry Card—Page 17

(Continued from page 344)

in a total cycle time of 2 seconds. The loader can be used on stamping presses, forging presses, drop hammers and machine tools with vertical spindles.

A typical operating cycle is as follows: A loader arm is indexed into the press working area and lowered over the part. Then it clamps the part, raises it from the die, and indexes over to the exit conveyor. Here the arm lowers the part onto the conveyor, releases it, raises and indexes to a clear station.



Simultaneously the second arm, which is mounted at right angles to the first arm, indexes over the incoming conveyor. It clamps the part, raises it, indexes into the press working area, lowers the part into the die, releases it, raises and indexes clear of the working area.

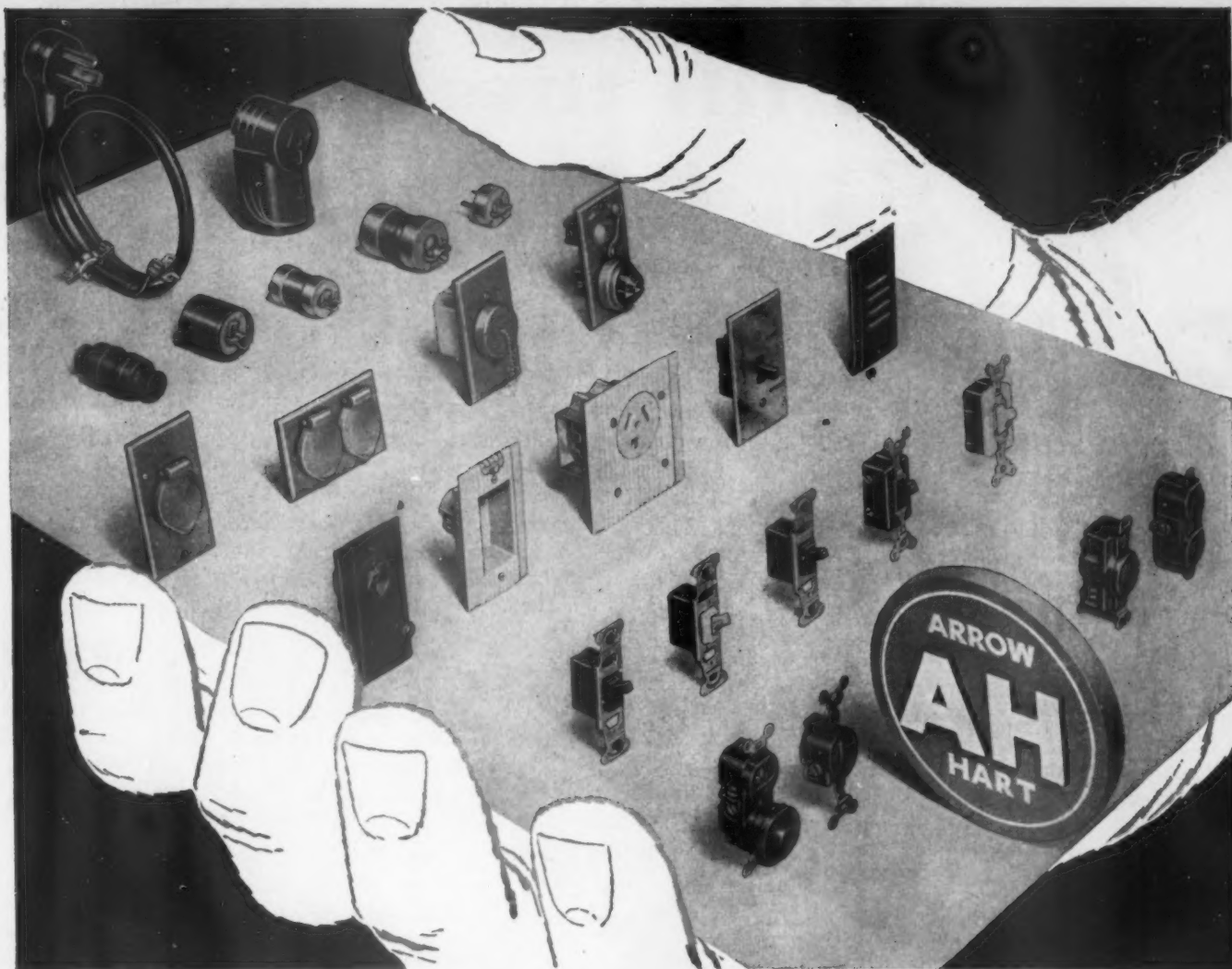
Called the Oct-O-Pus, the loader is made by Hautau Engineering Co., 721 Wanda St., Ferndale 20, Mich.

1 1 1

"Heat-Treating Lessons for Laymen" Aids Buyers

Purchasing personnel who may be called on to buy heat treating services without previous acquaintance with the subject will be interested in a new series of booklets entitled "Heat Treating Lessons for Laymen." The informative booklets, written in clear, non-technical language, give practical hints on how to get best results from heat treaters. They are available without charge from Perfection Tool & Metal Heat Treating Co., 1740-58 W. Hubbard St., Chicago 22, Ill.

**READER-SERVICE
INQUIRY CARD—PAGE 17**



NEW Developments ON HAND!

ARROW-HART'S QUALITY WIRING DEVICES . . . THE MOST COMPLETE LINE IN THE INDUSTRY

During the past two years alone, Arrow-Hart has developed 335 new advanced design items to keep pace with the needs of industry. That's where this handful of Arrow-Hart Wiring Devices comes into the picture. For here are but a few of the hundreds of Arrow-Hart Wiring Devices that make the Arrow-Hart Line the largest and most complete line of quality wiring devices in the industry.

And whatever your company's specific needs — grounding-type receptacles, heavy-duty tumbler switches, rotary lock switches, 2 and 3-wire polarized caps and connectors, heavy-duty industrial pilot lights, interlocking devices, etc. — you can buy economically from your Arrow-Hart distributor and get prompt delivery. There's one near you because . . . across the nation Arrow-Hart serves you through the leading electrical distributors of wiring devices.

MAIL COUPON FOR CATALOG INFORMATION ON ARROW-HART INDUSTRIAL WIRING DEVICES

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THE ARROW-HART & HEGEMAN ELECTRIC CO.
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Please send me all available free literature about Arrow-Hart's complete line of industrial wiring devices.

NAME _____

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CO. ADDRESS _____

CITY _____ ZONE _____ STATE _____

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For More Information Circle No. 370 on Inquiry Card—Page 17→

OCTOBER, 1954

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How many people to fill the shoes of **SIMONDS** **DISTRIBUTOR**

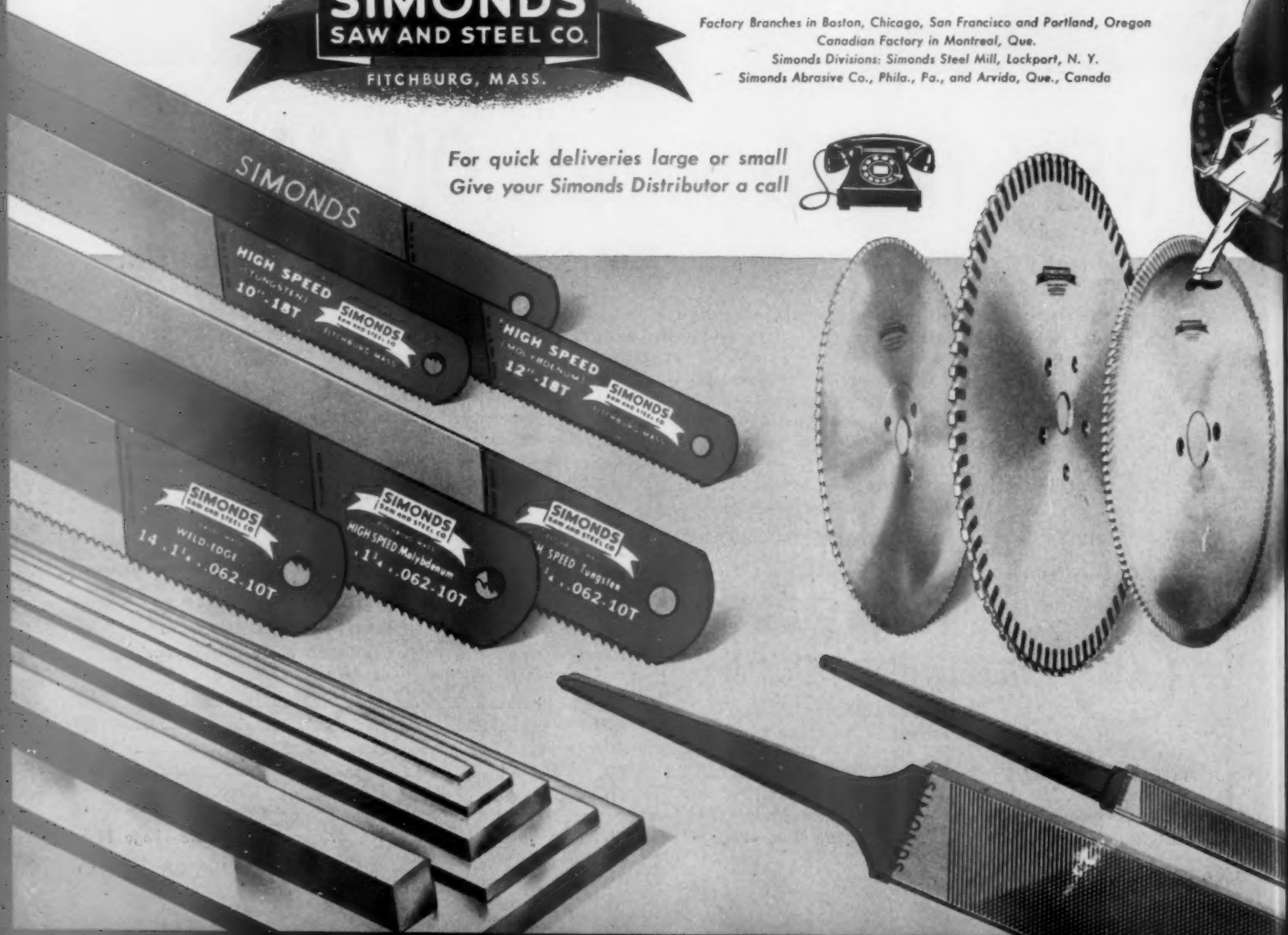
Your **SIMONDS DISTRIBUTOR** is a man of many functions . . . each of which saves your own time, money and manpower:

- He's your *Stock-keeper* . . . holding ready at hand enough Simonds Saws, Knives, Files, Die Steel, etc. . . . for your special needs . . . so you can cut your own inventory.
- He's your *Expediter* and *Special Deliveryman* . . . making up and delivering your orders *right now* . . . any time of the day or night.
- He's your *Efficiency Expert* . . . giving you a single source of supply for many items . . . and enabling you to cover each transaction with one order, one bill, one payment.
- He's your *Engineering Consultant* . . . with a vast fund of practical know-how on plant operation and cutting tool applications . . . and he's right up to date on new equipment and techniques.
- He's your *Private Detective*, ready to track down scarce or badly needed items.
- And he's your *Simonds Specialist* in the application of Simonds Products for cutting wood, metal, plastics, paper . . . a protector of your investment who sees to it that you get the best results out of the best cutting tools made . . . the Simonds red-trademarked line that's 100% quality-controlled from steel to finish-grinding.



Factory Branches in Boston, Chicago, San Francisco and Portland, Oregon
Canadian Factory in Montreal, Que.
Simonds Divisions: Simonds Steel Mill, Lockport, N. Y.
Simonds Abrasive Co., Phila., Pa., and Arvida, Que., Canada

For quick deliveries large or small
Give your Simonds Distributor a call



...would you need
...your
...?
...



Booklet Gives Design, Cost Data on Stampings

A guide to design, engineering, production and cost data on stampings is available from the Pressed Metal Institute, 2860 E. 130th St., Cleveland 20, O. Copies are sent free on request.

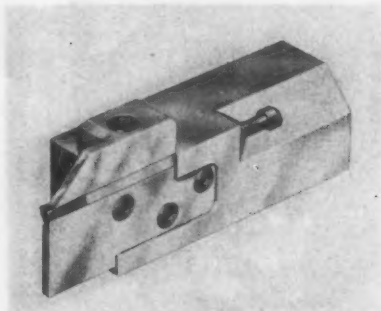
Chapter headings indicate useful information for buyers of stampings: Why Stampings?; Where Stampings; Conversion, Design, Replacement; Facts About Stampings (tolerances, dimensions, layout, definitions, sales terms, etc.); and Facts About Specifications and Design.

Cost Saving Rubber-Bonded Polishing Wheels

With abrasive grains embedded in resilient rubber, a line of polishing wheels has been designed that can give a number of finishes just by varying the pressure between the work and the wheel. This saves time and abrasive cost, according to the manufacturer, Sandusky Abrasive Wheel Co., 623 W. Ransom St., Kalamazoo, Mich. One wheel does the work of several that are

not so flexible. Resiliency of the bond is also said to increase wheel life. Wheels may be cut to polish grooves, flutes of taps and drills, corners and hard-to-reach areas. They are available in diameters from 1" to 10" and with face thicknesses from 1/4" to 1".

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OCTOBER, 1954

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To
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Cylinders



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|---|---|---|---|---|---|---|--|--|--|--|
| | 1"  | 2"  | 3"  | 4"  | 6"  | 8"  | 10"  | 12"  | 15"  | |
| 1½"  | 24.16 | 25.72 | 26.08 | 26.44 | 27.16 | 27.88 | 28.60 | 29.32 | 30.40 | |
| 2"  | 26.24 | 27.88 | 28.32 | 28.76 | 29.64 | 30.52 | 31.40 | 32.28 | 33.60 | |
| 2½"  | 32.36 | 34.12 | 34.68 | 35.24 | 36.36 | 37.48 | 38.60 | 39.72 | 41.40 | |
| 3"  | 35.04 | 37.28 | 37.92 | 38.56 | 39.84 | 41.12 | 42.40 | 43.68 | 45.60 | |
| 4"  | 40.84 | 43.68 | 44.52 | 45.36 | 47.04 | 48.72 | 50.40 | 52.08 | 54.60 | |
| 4½"  | 48.96 | 51.92 | 52.88 | 53.84 | 55.76 | 57.68 | 59.60 | 61.52 | 64.40 | |
| 6"  | 66.60 | 70.80 | 72.20 | 73.60 | 76.40 | 79.20 | 82.00 | 84.80 | 89.00 | |
| 8"  | 126.80 | 129.20 | 131.60 | 136.40 | 141.20 | 146.00 | 150.80 | 158.00 | | |

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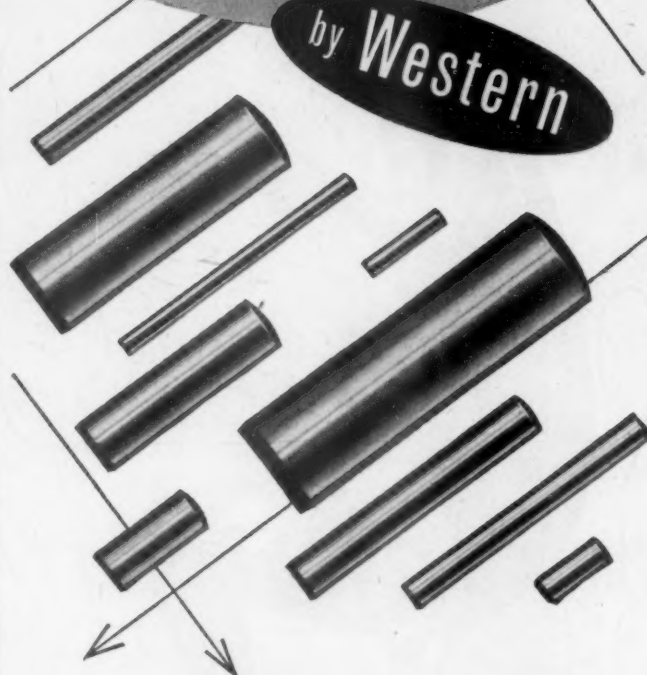
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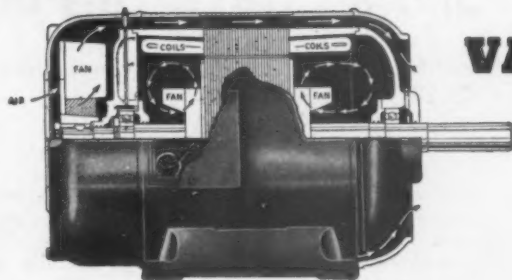
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Cleveland 2, Ohio

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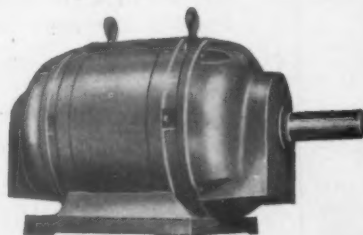
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For More Information Circle No. 375 on Inquiry Card—Page 17



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IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED

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two ways for chemical company!**



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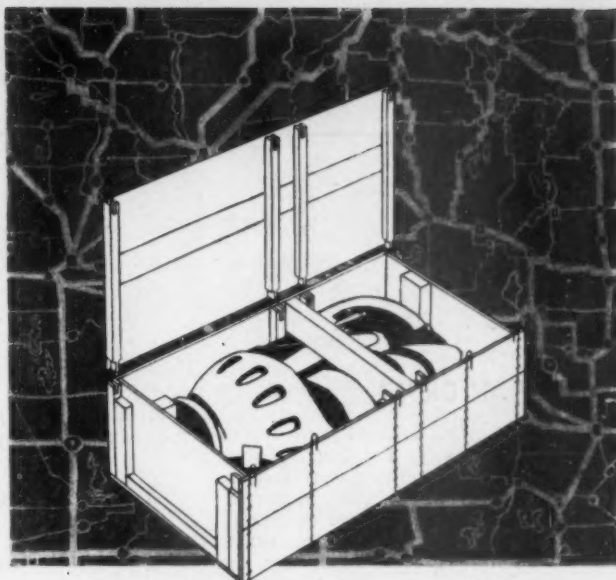
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OCTOBER, 1954



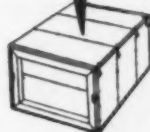
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LETTERS . . .

COST OF AN ORDER

I have read with interest your report on "How Serious Is the Small Order Problem in Purchasing?" (August issue, p. 75) and note that included in the report is an analysis of the cost of issuing a purchase order. I note that you list at 75% the number of orders that cost between 0 and \$5. I would appreciate it very much if you could give me more detailed information on this item, that is: the number of orders costing less than \$1, the number costing less than \$2, the number costing less than \$3, etc.

R. A. Lewis, Asst. Pur. Agt.
International Textbook Co.
Scranton, Pa.

• The breakdown into closer brackets, as requested, is as follows. This tabulation includes only those replies that report known costs, and does not take estimated costs into consideration. There is no information as to what items of cost are included in the various determinations.

Cost of Issuing Orders

| | |
|------------------|-----|
| \$5 or less..... | 75% |
| \$4 " "..... | 61% |
| \$3 " "..... | 50% |
| \$2 " "..... | 32% |
| \$1 " "..... | 22% |

The figures in this listing are inclusive for each bracket, i.e., the number of orders costing \$5 or less obviously includes those costing \$4 or \$3 or less, etc. The percentages should not be totalled, as each one is recounted in the next higher bracket.

An interesting comparison exists in this study and the more extensive study published in our issue of September, 1950. In the 1950 study, the average cost per order reported was \$3.43, and the median figure was \$3, corresponding closely to the current report of \$3 or less by exactly 50% of those participating.—Ed.

PURCHASER'S CODE

On page 78 of the August issue, in an article by Mr. Frank E. Whyte, there is a chart listing the Principles and Standards of Purchasing Practice advocated by the National Association of Purchasing Agents. If this chart is printed on

a card as shown in the article, and is available through your office, kindly mail a copy to the attention of the writer.

C. J. Wieck, Pur. Agt.
Kolmar Laboratories
Milwaukee, Wis.

• Contact the National Association of Purchasing Agents, 11 Park Place, New York, N. Y.—Ed.

SALES TYPES

We would like to publish the article "Some Sales Types", from the August issue of PURCHASING in "Ahco News", our company paper. May we have your permission to do so? The article was very well done and we feel it would be of interest to our readers.

Edna M. Lindberg, Editor
Arnold, Hoffman & Co., Inc.
Providence, R. I.

The caricatures on pages 116 and 117 of your August issue are splendid. We use blown-up sketches like these on the walls of our cocktail lounge at the annual Seller-Buyer Dinner of the Alabama Purchasing Agents Association. Would it be possible for us to borrow the original drawings from you for this purpose?

G. L. Wilson, Pur. Agt.
Jefferson County
Birmingham, Ala.

• PURCHASING is happy to pass along this pictorial commentary on the lighter side of purchasing, in the hope that it will provide another chuckle in an over-serious world. The artist, by the way, is the talented J. P. Ronan of the Conover-Mast art department.—Ed.

INVOICE PROCEDURE

One of our new members would like to obtain a copy of a recent write-up that appeared in PURCHASING. We do not know in which particular month this appeared, but it had to do with the handling of invoices and purchasing, particularly with the matching of invoices with receiving memorandum, etc. If you can identify this article, we would very much appreciate receiving a copy.

W. H. Rodgers, President
Tri-City Assn. of Pur. Agts.
Davenport, Iowa

• The reference is probably to the article "Who Should Check Invoices", in the September, 1952, issue. Tear sheet sent.—Ed.

GLOVE LAUNDERERS

We refer to the article in your August issue entitled "Second Life for Industrial Gloves", by John W. Gibson. Being large users of canvas and rubber gloves, we would appreciate the names and addresses of several concerns you can recommend who handle the rehabilitation of gloves. The article was very interesting and we trust may prove beneficial to our concern.

F. D. Peale, Pur. Dept.
Skenandoo Rayon Corp.
Utica, N. Y.

• The glove rehabilitation service referred to is provided by members of the National Institute of Industrial Launderers. A list of the members serving your area can be obtained by addressing the Institute at 716-717 Warner Building, Washington, D.C.—Ed.

INTERESTING, INFORMATIVE

I have just finished reading the article "Industrial Engineering Techniques Applied to Purchasing," by N. A. Lamberti, in the August edition of PURCHASING. I find this material very interesting and informative.

H. W. Stelzle
Pur. Operations Analyst
American Cyanamid Co.
New York, N. Y.

TRAVELING REQUISITION

I wish to make a study of the use of "traveling requisitions" in our inventory control and purchasing systems. Please give me a list of references to articles appearing in PURCHASING on this subject during the past two years.

E. H. Van Horn, Pur. Agt.
C. B. Cottrell & Sons Co.
Westerly, R. I.

• Recent reference on this subject are as follows:

"Traveling Requisition System Adopted at Timken Plant," October 1952 issue, page 180.

"Simplifying Procedure with the Traveling Requisition," by W. T. Ryan, December 1952 issue, page 96.

Letter from L. de Polac, National Lead Co., January 1953 issue, Page 334.

"The Traveling Requisition and How to Use It," by J. H. Snyder, November 1953 issue, page 92.



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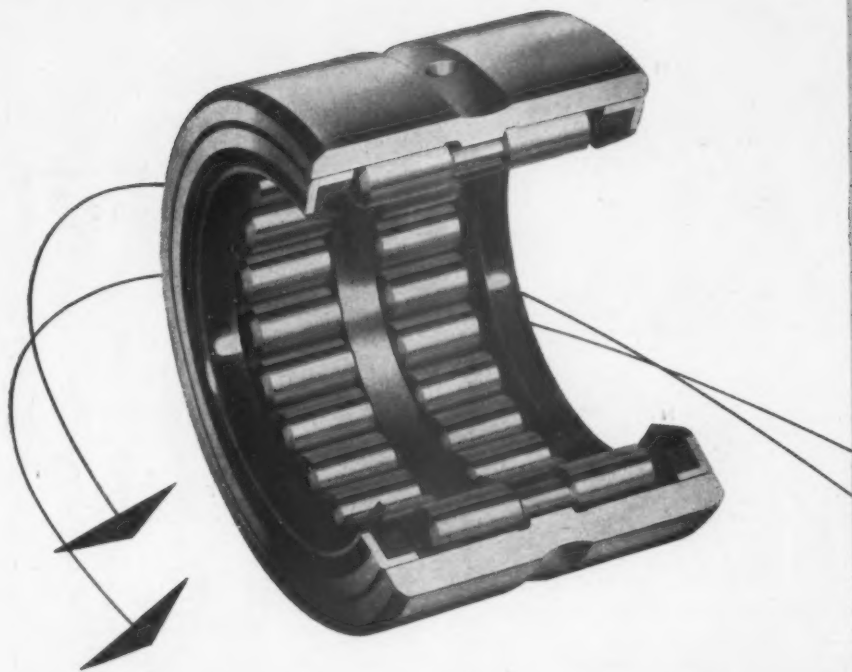
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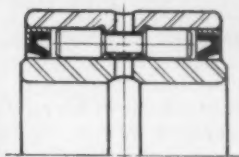
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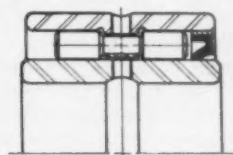
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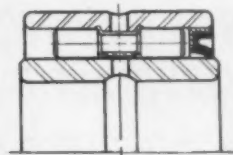
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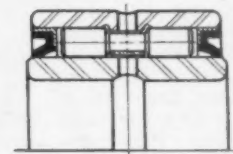
SS—Double seal, lips in.
For lifetime retention of
lubricant.



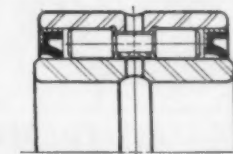
S—Single seal, lip in. Re-
tain lubricant. Usually an-
other sealed bearing at
other end of shaft.



RS—Single seal, lip out.
Used opposite another
bearing to prevent entry
of foreign material from
one face.



RSS—Double seal, lips
out. Prevents entry of for-
eign materials from both
faces.



SRS—Double seal, one lip
in, one lip out. For easy
relubricating without dis-
placing seal.

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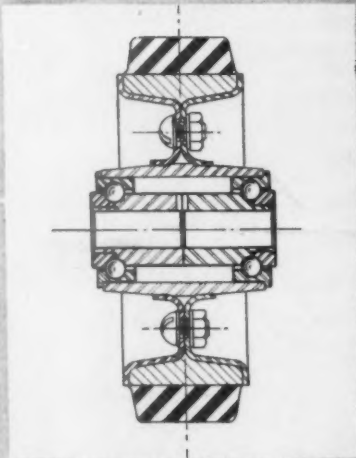
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MATERIALS-HANDLING NEWS

★ Panel Discussions by Bassick, World's Largest Manufacturer of Casters and Floor Protection Equipment ★

Improved rubber-tire caster handles high-shock loads



Unit design of bearings permits easy handling of bearing assembly when disassembling wheel. Bearings cannot be preloaded or misaligned in mounting wheel.



Rubber-tired disc wheels and double ball-bearing hubs feature new design innovations. Easy to disassemble; replaceable tire, disc and bearing assembly.

New design better eight ways

Bassick's medium-heavy-duty and medium-duty casters with demountable rubber tires feature *eight* improvements which make them top choice for heavy institutional applications.

1. **File-hard** (15N90 Rockwell hardness) bearing surfaces provide longer wear and service life, precluding premature failure.
2. **Permanently adjusted double-ball bearings** never require adjustment or realignment, unlike cone and cup design.
3. **Inner race construction** prevents pre-loading of bearings when axle nut is tightened, prevents misalignment during mounting of wheel.
4. **Unit bearings** can't fall apart when disassembling wheel.
5. **Completely replaceable tires, discs and unit bearings.**

SERIES H99 swivel caster with demountable rubber tire, double-ball-bearing action for easy swiveling. 5" and 8" wheel diameters; loads, 250 and 350 lbs. each.



SERIES H68 swivel caster. Full case-hardened (15N90 Rockwell) bearing surfaces for extra wear (as in H99). 3½" and 5" wheel diameters; loads, 140 and 180 lbs. each.

6. **Electroplated** steel discs, bolts, lock washers, nuts have zinc or cadmium finish to resist corrosion — superior to paint.

7. **High-tensile rubber treads** vulcanized on hard non-stretching tread base.

8. **Alemite lubrication fittings** are standard, except on milk case dolly casters, which have flush-type lubricators.

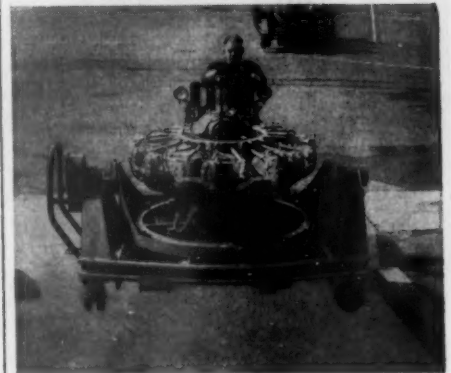
You can order this new caster in Series 68, H68, and H99, swivel and matching rigid types, in 3½", 5" and 8" wheel diameters. For operational loads from 140 to 350 lbs. each. Full details in Catalog No. 4R-54. Facts on Sealed Swivel casters are yours in Catalog 3D99-53.

So tough that file won't bite



You get extra service from Bassick steel casters case-hardened to 15N90 Rockwell hardness — even a file can't cut raceway surfaces.

Latest air lift



At AVCO's Lycoming Division, Stratford, Conn., they've come up with an unusual technique for handling the aircraft engines produced there.

Engines are assembled on a stand equipped with special dual-wheel Bassick casters designed for extreme heavy-duty service. Since these particular forged steel casters aren't built for road speeds, Lycoming engineers had to figure out a faster way of getting the stands from one plant area to another.

Wheels within wheels

You see their solution above. Fork-lift trucks snatch up the engine stand, casters and all, then whiz it off to the next station, where the casters take over low-speed movement. Result: No snail's pace progress between stations; no slow-down in production.

Ask the Bassick man

For the answer to *your* materials-handling problems, why not start with the man who handles the world's largest line of casters—your Bassick distributor. Whenever you want to move something, put it on Bassick casters — they deliver the goods. He'll be glad to show you how. Call your Bassick distributor.



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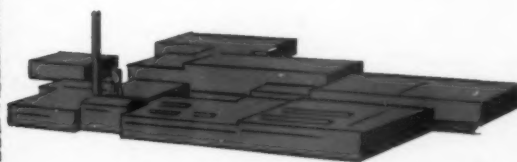


The Fort Howard method of treating pulp fibers produces pure-white paper towels that dry faster, feel better, give you greater towel economy!

Take Fort Howard's pure-white Handifold: Controlled Wet Strength keeps Handifold strong and firm when wet, without sacrificing softness or absorbency. Stabilized Absorbency means that Handifold retains its drying ability regardless of towel age. And, like all Fort Howard Paper Towels Handifold has sufficient body for maximum absorbency.

Each of the eighteen grades and folds of Fort Howard Paper Towels has these three requirements of a good paper towel. In addition, all Fort Howard Towels are Acid Free... feel good, are easy on your hands. Call Your Fort Howard Distributor Salesman today!

Fort Howard
Towels Fit
Any Folded
Towel
Cabinet



FORT HOWARD PAPER COMPANY
GREEN BAY, WISCONSIN

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Fig. 2651-A Gate

JENKINS
NICKEL IRON
Valves with Type 316
STAINLESS STEEL

Trim



Fig. 2624 Swing Check

This combination provides corrosion resistance well above the moderate need in many processing services with an investment well below that for all-stainless steel valves.

Designed primarily for the chemical process industries, they are recommended for control of mildly corrosive liquids with minimum quantities of mineral acids, such as creosote in wood treatment, and many liquids carried in petroleum processing.

A major use is in pulp and paper processing, particularly in lines serving the digester, and in the chemical recovery cycle. Service records in lines carrying the valve-punishing "black liquor" give Jenkins Nickel Iron Valves top performance rating.

Jenkins *extra value* construction throughout. Get details — compare. See why they stretch your valve investment dollar — with longer service life, lower maintenance cost.

ALSO RECOMMENDED for fluids used in electroplating, photograph finishing, textile bleaching, dyeing and finishing and heat treating of metals.

GET COMPLETE SPECIFICATIONS from your Jenkins Valve Distributor, or write: Jenkins Bros., 100 Park Ave., New York 17. Ask for Bulletin 118.

for lower cost control
of moderately **Corrosive** fluids

Every part in contact with fluid is the right metal to block corrosion and beat wear.

Cast NICKEL IRON

- **BODIES** Heavy duty, dimensioned for greater resistance to wear and abuse. Through port design in Gate Valves.
- **BONNET** Rugged construction, like body. Swing-type gland bolts. Screwed-in back-seating bushing. Deep stuffing box.
- **YOKE** Integral with bonnet in 2" to 4" sizes.
- **WEDGE** In 10" to 24" sizes, with Stainless Steel Wedge Rings.
- **COVER** In Check Valve.

Type 316 STAINLESS STEEL

- **SPINDLE**
- **GLAND**
- **BONNET BUSHING**
- **SPINDLE RING**
- **WEDGE PIN**
- **WEDGE RINGS** Rolled into Nickel Iron Wedge in 10" to 24" sizes.
- **SEAT RINGS**
- **DISC and HANGER** in Check Valve

NI-RESIST Type No. 2

- **WEDGE** of I-beam structure is solid NI-RESIST in 2" to 8" sizes.

PRESSURE RATINGS

2" to 12"—200 lbs. O.W.G.
14" to 24"—150 lbs. O.W.G.

JENKINS
LOOK FOR THE DIAMOND MARK
VALVES



Jenkins Bros.